

**A Methodology for Long-Term Electrical Load Forecasting Using Empirical Mode
Decomposition**

by

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ABSTRACT

Power system expansion planning begins with a forecast of future load requirements. Estimation of both demand and energy requirements are crucial to effective system planning. Load forecasting is also important for operational decision making by utilities and for contract evaluations and evaluations of various sophisticated financial products on energy pricing offered by the market.

Load forecasting is concerned with the prediction of hourly, daily, weekly and annual values of the system demand and peak demand. Long-term load forecasting is an integral process in scheduling the construction of new generation facilities and in the development of transmission and distribution systems.

Empirical mode decomposition (EMD) technique has been applied for short-term load forecasting, identification of weather sensitive component of electrical load and multi scale analysis of daily peak load. A long-term load forecasting method using EMD is developed in this thesis. The proposed methodology is entirely based on the historical load data. No econometric factor like GDP, change in literacy rate, industrialization, new electricity connectivity etc. are considered in the forecasting process due to the lack of reliable data.

In this work, EMD technique is used on the historical load data of Bangladesh Power System (BPS) to decompose it into intrinsic oscillatory components, called intrinsic mode functions (IMFs) and a residue. Daily, weekly and monthly ratios of each IMF and the residue are evaluated. Expected values of daily, weekly and monthly ratios of each IMF and the residue are determined. A ratio factor for each day of each IMF and the residue is calculated.

The annual peak value of each IMF and the residue are forecasted using least square 2nd order polynomial regression. These forecasted values are multiplied with corresponding ratio factor of each day to forecast the daily peak values of each IMF and the residue. Finally, the forecasting of electrical load is obtained by summing up the forecasted IMFs and the residue.

The proposed methodology is validated through statistical error evaluation process and comparison with other standard techniques. The developed methodology is applied to forecast the daily peak load of BPS for a 10 year period, from year 2013 to year 2022.

TABLE OF CONTENTS

	Page No.
Title of the Thesis	i
Approval	ii
Declaration	iii
Acknowledgement	iv
Abstract	v
Table of Contents	vii
List of Tables	ix
List of Figures	x
List of Abbreviations of Technical Symbols and Terms	xi
CHAPTER 1 INTRODUCTION	1
1.1 Introduction	2
1.2 Long-Term Load Forecasting Techniques	3
1.3 Literature Review	4
1.4 Thesis Objective	7
1.5 Thesis Organization	8
CHAPTER 2 LONG-TERM LOAD FORECASTING USING EMD	9
2.1 Introduction	10
2.2 Empirical Mode Decomposition (EMD) Technique	10
2.3 Regression Analysis	12
2.4 Appropriateness of Using EMD on Electrical Load Data	15
2.5 Long-Term Load Forecasting Methodology Using EMD	16
2.6 Validation of the Proposed Methodology	25
2.6.1 Statistical Error Evaluation	25
2.6.2 Comparison with Other Techniques	27

CHAPTER 3	HISTORICAL LOAD DATA OF BPS	29
3.1	Introduction	30
3.2	Collection of Daily Peak Load Data	30
3.3	Reliability of the Collected Data	30
3.4	Sample Data	31
CHAPTER 4	RESULTS AND ANALYSIS	34
4.1	Introduction	35
4.2	Decomposition of Load Data	35
4.3	Daily Ratios	40
4.4	Weekly Ratios	42
4.5	Monthly Ratios	43
4.6	Ratio Factors	44
4.7	Forecasting of Annual Peak Values of IMFs and the Residue	45
4.8	Forecasting of Daily Peak Values of IMFs and the Residue	49
4.9	Forecasting of Daily Peak Load	50
4.10	Forecasting of Annual Peak Load	53
4.10.1	Forecasting of Annual Peak Load Including Diversity Factor	54
4.11	Observations	56
CHAPTER 5	CONCLUSION AND RECOMMENDATIONS	58
5.1	Introduction	59
5.2	Conclusion	59
5.3	Recommendation for Future Research	60
REFERENCES		62
APPENDICES		67

LIST OF TABLES

Table No.	Description	Page No.
Table 2.1	MAPE using the proposed methodology	26
Table 3.1	Daily peak load of BPS of year 2012	31
Table 4.1	Mean time period	40
Table 4.2	Expected daily ratios of IMFs and the residue for the month of January	41
Table 4.3	Expected weekly ratios of IMFs and the residue	42
Table 4.4	Expected monthly ratios of IMFs and the residue	43
Table 4.5	Ratio factors IMFs and the residue for the month of January	44
Table 4.6	Historical annual peak values of the residue of load data	45
Table 4.7	Daily peak values of different IMFs and the residue for January, 2014	49
Table 4.8	Forecasted daily peak load of year 2014	50
Table 4.9	Forecasted annual peak load of BPS	53
Table 4.10	Expected diversity factor	55
Table 4.11	Forecasted annual peak load of BPS using diversity factor	56
Table 4.12	Addition generation requirement	57

LIST OF FIGURES

Figure No.	Description	Page No.
Figure 2.1 (a)	Flow chart of the proposed load forecasting methodology	22
Figure 2.1 (b)	Flow chart of the proposed load forecasting methodology (Continued)	23
Figure 2.1 (c)	Flow chart of the proposed load forecasting methodology (Continued)	24
Figure 2.2	Actual and reconstructed load of BPS of last 12 years	26
Figure 2.3	Reconstructed load using different methods	27
Figure 2.4	Comparison of MAPE between proposed methodology and other techniques	28
Figure 4.1	Daily peak load data of year 2012	36
Figure 4.2	IMF1 (1 st IMF) of the daily peak load data of the year 2012	36
Figure 4.3	IMF2 (2nd IMF) of the daily peak load data of the year 2012	37
Figure 4.4	IMF3 (3rd IMF) of the daily peak load data of the year 2012	37
Figure 4.5	IMF4 (4th IMF) of the daily peak load data of the year 2012	38
Figure 4.6	IMF5 (5th IMF) of the daily peak load data of the year 2012	38
Figure 4.7	IMF6 (6th IMF) of the daily peak load data of the year 2012	39
Figure 4.8	Residue of the daily peak load data of the year 2012	39
Figure 4.9	Fitted curve to the historical annual peak values of the residue	46
Figure 4.10	Fitted curve to the historical annual peak values of IMF3	47
Figure 4.11	Fitted curve to the historical annual peak values of IMF4	48
Figure 4.12	Fitted curve to the historical annual peak values of IMF5	48
Figure 4.13	Fitted curve to the historical annual peak values of IMF6	49

LIST OF ABBREVIATIONS OF TECHNICAL SYMBOLS AND TERMS

EMD	: Empirical mode decomposition
BPS	: Bangladesh Power System
ISO	: Independent system operator
ANN	: Artificial neural network
SVR	: Support vector regression
SVM	: Support vector machine
GDP	: Gross domestic product
IMF	: Intrinsic mode function
NLDC	: National Load Dispatch Center
PGCB	: Power Grid Company of Bangladesh
S_r	: Sum of the squares of the errors
DR	: Daily ratio
WR	: Weekly ratio
MR	: Monthly ratio
$L(t)$: Original load data
$IMF_i(t)$: i-th IMF of load data
$Re(t)$: Residue of load data
n	: Total no. of IMFs
DR_{ijklm}	: Daily ratio of i-th IMF of j-th day of k-th week of l-th month of m-th year
DP_{ijklm}	: Peak value of i-th IMF of j-th day of k-th week of l-th month of m-th year
WP_{iklm}	: Peak value of i-th IMF of k-th week of l-th month of m-th year
$E(DR_{ij})$: Expected daily ratio of i-th IMF of j-th day
N	: No. of years considered for historical data
WR_{iklm}	: Weekly ratio of i-th IMF of k-th week of l-th month of m-th year
MP_{ilm}	: Peak value of i-th IMF of l-th month of m-th year
$E(WR_{ik})$: Expected weekly ratio of i-th IMF of k-th week
MR_{ilm}	: Monthly ratio of i-th IMF of l-th month of m-th year

$YP_{i m}$: Peak value of i-th IMF of m-th year
$E (MR_{i l})$: Expected monthly ratio of i-th IMF of l-th month
$RF_{i j}$: Ratio factor of i-th IMF of j-th day
$FDP_{IMF i j q}$: Forecasted daily peak value of i-th IMF of j-th day of q-th year
$FYP_{IMF i q}$: Forecasted annual peak value of i-th IMF of q-th year
$FDPL_{j q}$: Forecasted daily peak load of j-th day of q-th year
$FDP_{res j q}$: Forecasted daily peak value of the residue of j-th day of q-th year
$MAPE$: Mean absolute percentage error
L_{act}	: Actual daily peak load
L_{rect}	: Reconstructed daily peak load
N_t	: Total number of days in a year
$FYPL_{res}$: Forecasted annual peak value of the residue
t	: Time (Year)
$FYPL_{IMF 3}$: Forecasted annual peak value of IMF3
$FYPL_{IMF 4}$: Forecasted annual peak value of IMF4
$FYPL_{IMF 5}$: Forecasted annual peak value of IMF5
$FYPL_{IMF 6}$: Forecasted annual peak value of IMF6
$FYPL_q$: Forecasted annual peak load of q-th year
$FDPL_{Jan 1 q}$: Forecasted annual peak load of January 1 of q-th year
$FDPL_{Jan 2 q}$: Forecasted annual peak load of January 2 of q-th year
$FDPL_{Dec 31 q}$: Forecasted annual peak load of December 31 of q-th year
$DF_{i m}$: Diversity factor of i-th IMF of m-th year
$YPL_{IMF i m}$: Annual Peak value of i-th IMF of m-th year
$PL_{IMF i m}$: Value of i-th IMF at the time of system peak load of m-th year
$E (DF_i)$: Expected diversity factor of i-th IMF
$E (DF_{res})$: Expected diversity factor of the residue
AGR	: Additional generation requirement
$FYPL_{q+1}$: Forecasted annual peak load of (q+1)-th year

CHAPTER 1
INTRODUCTION

1.1 Introduction

The term 'load forecasting' means the prediction of future load requirements. The expansion planning and operation of all three sectors, generation, transmission and distribution, of power systems essentially require load forecasting. It also helps an electric utility to make important decisions on purchasing and generating electric power, load switching and infrastructure development. Load forecasting is extremely important for energy suppliers, independent system operators (ISOs), financial institutions and other participants in electric energy markets. It is also used to establish procurement policies for construction capital, where, for sound operation, a balance must be maintained in the use of debt and equity capital. A good forecasting reflects the future trend of load consumption and hence it is the key part of all generation expansion planning process [1]. The accuracy of a forecasting is crucial, since it dictates the timing and characteristics of major system additions. A forecast that is too low results in loss of load. On the other hand, forecasts that are too high can result in severe financial problem due to excessive investment in an electric plant that is not fully utilized or, equivalently, is operated at low capacity factors [2].

Electric loads may be broadly classified as residential, commercial and industrial. Residential loads have the most constant annual growth rate and the most seasonal fluctuations. Commercial loads are also characterized by seasonal fluctuations. These fluctuations are mainly due to extensive use of air conditioning and space heating. Industrial loads are considered as base loads that contain little weather dependent variation. Load forecasting can be divided into three categories: short-term forecasting

which are usually from one hour to one week, mid-term forecasting which are usually from a week to a year and long-term forecasting which are longer than a year.

The forecasts for different time horizons are important for different operations within a utility company. The natures of these forecasts are different as well. For short-term load forecasting several factors should be considered, such as time factors, weather data, and possible customers' classes. The medium- and long-term forecasts take into account the historical load and weather data, the number of customers in different categories, the appliances in the area and their characteristics including age, the economic and demographic data and their forecasts, the appliance sales data, and other factors [3-6].

1.2 Long-Term Load Forecasting Techniques

The techniques for long-term load forecasting may be broadly categorized into three groups,

- i) End-use approach
- ii) Econometric approach
- iii) Statistical approach

The end-use approach directly estimates energy consumption by using extensive information on end use and end users, such as appliances, the customer use, their age, sizes of houses, and so on. Statistical information about customers along with dynamics of change is the basis for the forecast. End-use models focus on the various uses of electricity in the residential, commercial, and industrial sector. These models are based on the principle that electricity demand is derived from customer's demand for light, cooling, heating, refrigeration, etc. Thus end-use models explain energy demand as a

function of the number of appliances in the market [7]. Ideally this approach is very accurate. However, it is sensitive to the amount and quality of end-use data. For example, in this method the distribution of equipment age is important for particular types of appliances. End-use forecast requires less historical data but more information about customers and their equipment.

The econometric approach combines economic theory and statistical techniques for forecasting electricity demand. The approach estimates the relationships between energy consumption (dependent variables) and factors influencing consumption. The relationships are estimated by the least-squares method or time series methods [8].

The end-use and econometric methods require a large amount of information relevant to appliances, customers, economics, etc. Their application is complicated and requires human participation. In order to avoid the use of the unavailable information, statistical models are used that learn the load model parameters from the historical data [9].

1.3 Literature Review

Through the last few decades, a lot of research works have been carried out on long-term electrical load forecasting. The application of the classical forecasting methods, when applied to a fast developing utility with a period characterized by fast and dynamic changes, are insufficient and may provide an invaluable dimension to the decision making process. A knowledge-based expert system to support the choice of the most suitable load forecasting model for medium/long term power system planning is presented in [10]. Long-term industrial load forecasting using nonlinear autoregressive exogenous model (NARX) based feed-forward neural network (FFNN) method, support

vector regression (SVR) and neural network models is presented in [11]. Medium and long-term electric load forecasting based on chaos support vector machine (SVM) is proposed in [12]. In [13], the development and testing of a hybrid intelligent long-term load forecasting system is presented consisting of several neural networks forecasting blocks, genetic algorithms for network architecture selection and optimization, and fuzzy rules for forecast combination.

Traditional studies for long-term load forecasting based on regression method can not provide a true representation of power system behavior in a volatile electricity market. Fuzzy sets to ANN for modeling long-term electrical demand is shown in [14].

Long-term load forecasting is a challenging task because of the complex relationships between load and factors affecting load. However, it is crucial for the economic growth of fast developing countries. In [15], long-term load forecasting with an economic factor, gross domestic product (GDP), is implemented. A support vector regression is applied as the training algorithm to obtain the nonlinear relationship between load and the economic factor GDP to improve the accuracy of forecasting. In developing countries, where power demand increases more dynamically, load forecasting is even more important. In [16], artificial neural network (ANN) is used to predict electric loads. In long-term load forecasting, economical factors are more influential than weather conditions. So weather factors were omitted in this study.

A new approach based on a hybrid fuzzy neural technique which combines artificial neural network and fuzzy logic modeling for long term industrial load forecasting in electrical power systems is presented in [17]. An extensive study is also carried out to find the accurate forecasting model through an application in Egypt. A lot of exogenous

factors and the sequential variance held by the power system itself should be considered in the medium and long term load forecasting of power system. In view of these characters, the study on long and medium term load forecasting is worked by the means of multi-level recursive regression in [18], and the model is established based on it. A new technique for long-term electric power load forecasting is proposed in [19]. The technique is based on fuzzy linear regression which uses long term annual growth factors to estimate fuzzy linear regression model parameters. In this technique a linear optimization problem is formulated, where the objective is to minimize the spread of fuzzy regression parameters.

Moreover, combined neuro fuzzy models, grey theory, combined wavelet and neural network, variable structure ANN, hidden Markov model, decision tree method, fuzzy optimal theory, fuzzy clustering algorithm and other techniques have been applied for long-term load forecasting [20-27].

In a long-term context, planners must adopt a probabilistic view of potential peak demand levels. Therefore density forecasts (providing estimates of the full probability distributions of the possible future values of the demand) are more helpful than point forecasts, and are necessary for utilities to evaluate and hedge the financial risk accrued by demand variability and forecasting uncertainty. A new methodology to forecast the density of long-term peak electricity demand is proposed in [28]. A comprehensive forecasting solution developed by Monash University is described in [29]. The semi-parametric additive models based forecasting system has been used to forecast the electricity demands for regions in the National Electricity Market of Australia. A model that provides probabilistic forecasts of both magnitude and timing for lead times of one

year is presented in [30]. This model is capable of capturing the main sources of variation in demand and uses simulated weather time series, including temperature, wind speed, and luminosity, for producing probabilistic forecasts of future peak demand.

Long-term forecasting method based on the development of a mathematical relation between the forecasted hourly loads and forecasted annual peak load through the mean value of some load ratios is presented in [31]. A mathematical relation between the forecasted hourly loads and forecasted annual average load through the mean value of some load ratios is presented in [32]. The load ratios considered in these methods are hourly ratio, daily ratio, weekly ratio and monthly ratios.

Empirical Mode Decomposition (EMD) [33] technique is applied for short-term load forecasting, identification of weather sensitive component of electrical load and multi scale analysis of daily peak load [34-36]. In [35] EMD is used only to identify the load components influencing long-term load variation but no forecasting technique is proposed.

1.4 Thesis Objective

The first objective of this thesis is to develop a methodology for long-term electrical load forecasting using EMD. The second objective of this thesis is to apply the developed methodology to forecast the long-term daily peak demand of Bangladesh Power System (BPS).

1.5 Thesis Organization

There are five chapters in this thesis. A brief description of all the chapters is presented sequentially.

Chapter 1 is the introductory chapter of the thesis. It consists of introduction, electrical load forecasting method, literature review, objective of the thesis and thesis organization. The introduction of chapter 1 briefly clarifies the importance of load forecasting. Widely used several long-term electrical load forecasting methods are also introduced in this chapter. A review of some previous research works relating to this thesis work is presented in literature review. This chapter also discusses about the objective of the thesis and gives a brief idea about all the chapters of this thesis work.

Chapter 2 presents the long-term load forecasting method using EMD. This chapter introduces the EMD technique and the steps of the methodology algorithmic form. The whole process is also presented in brief using a flow chart. It also contains the validity of the proposed methodology.

Chapter 3 presents the past historical data of daily peak demand of BPS. The data sources and reliability of the collected data has been clarified. It contains a sample data of daily peak load of BPS of year 2012.

Chapter 4 presents the detailed analysis and forecasted peak loads, daily and annual, of BPS for the period of next 10 years, that is, from year 2013 to 2022. The critical observations of the forecasted results are also presented here.

Chapter 5 concludes the thesis. It also provides the recommendation for future research works related to this thesis.

CHAPTER 2
LONG-TERM LOAD FORECASTING USING EMD

2.1 Introduction

The objective of this work is to develop a methodology for long-term electrical load forecasting using empirical mode decomposition (EMD) technique. Electrical load does not vary about the fixed mean, so it can be viewed as a non-stationary time series signal. A non-stationary time series signal can be regarded as a linear combination of different signals characterized by different frequencies. EMD technique is used to decompose a non-stationary time series signal into intrinsic oscillatory components called intrinsic mode functions (IMFs) and a residue. Since electrical load can be treated as a non-stationary time series signal, it can be decomposed using EMD technique. After decomposing the original load signal, each component is forecasted separately. Finally, the forecasting of electrical load is obtained by summing up the predicted results of all IMFs and the residue together.

2.2 Empirical Mode Decomposition (EMD) Technique

The key part of the EMD method is to decompose any complicated data set into a finite intrinsic mode functions (IMFs) and a residue. Residue can be either the mean trend of the data or a constant. An intrinsic mode function (IMF) is a function that satisfies two conditions [33],

- I. In the whole data set, the number of extrema and the number of zero crossings must either equal or differ at most by one.
- II. At any point, the mean value of the envelope defined by the local maxima and the envelope defined by the local minima is zero.

EMD can also be applied to data with non-zero mean, either all positive or all negative values, without zero crossings. A systematic way to decompose the data is known as the sifting process. It is described as follows:

- I. All the local maxima of the data are identified and connected by cubic spline line as the upper envelope.
- II. All the local minima of the data are identified and connected by cubic spline line as the lower envelope.
- III. The mean of the upper and lower envelope is determined and this mean is subtracted from the original signal. The mathematical expression is: $X(t) - m_1 = h_1$, where $X(t)$ is the original signal, m_1 is the mean of upper and lower envelopes and h_1 is the first component. It is known as first sifting process.
- IV. Now if h_1 does not satisfy the properties of an IMF, then h_1 is treated as data and steps (I), (II) and (III) are applied to h_1 . The mathematical expression in this step is given by: $h_1 - m_{11} = h_{11}$, where h_1 is the original data, $m_{11} =$ mean of the upper and lower envelopes derived from h_1 . This process is known as second sifting process.
- V. The process is repeated until the first IMF is obtained. If the first IMF is obtained at the k -th iteration of the sifting procedure, then the mathematical expression is given by: $h_{1(k-1)} - m_{1k} = h_{1k}$, where h_{1k} is the first IMF component of data and denoted as $c_1 = h_{1k}$.
- VI. After computing the first IMF component, it is separated from the original signal as $X(t) - c_1 = r_1$, where r_1 is known as the residue.

- VII. Since the residue r_1 still contains the information of longer period components, it is treated as the new data and subjected to the same sifting process as described above.
- VIII. The process is repeated on all the subsequent residues and result can be expressed mathematically as: $r_1 - c_2 = r_2, \dots \dots, r_{n-1} - c_n = r_n$.
- IX. The sifting process is stopped when the residue r_n becomes a monotonic function from which no IMF can be extracted.
- X. Eventually the original signal can be represented as: $x(t) = \sum_{i=1}^{i=n} c_i + r_n$.
- XI. Thus original data is decomposed into 'n' IMFs and a residue which can be either the mean trend of the data or a constant.

In this work, tolerance parameter of 0.05 and the thresholds of 0.05 are used as the stopping criteria of the sifting algorithm [33].

To apply the EMD method, a zero reference of the data is not required. EMD only needs the locations of local extrema. The zero references of each component will be generated by the sifting process.

2.3 Regression Analysis

Regression is a highly useful statistical technique for developing a quantitative relationship between a dependant variable and one or more independent variables. Where substantial error is associated with data, a more appropriate strategy for such cases is to derive an approximating function that fits the shape or general trend of the data without necessarily matching the individual points. One way to do this is to derive a curve that

minimizes the discrepancy between the data points and the curve. A technique for accomplishing this objective is called least squares regression, where the goal is to minimize the sum of the square errors between the data points and the curve. Now depending on whether to fit a straight line or other higher order polynomial, regression may be linear or polynomial.

In this work, 2nd order polynomial regression is used to forecast the annual peak values of the IMFs and the residue. The method is described below.

2nd Order Polynomial Regression:

The mathematical expression for data points $(x_1, y_1), (x_2, y_2) \dots \dots (x_n, y_n)$ fitted to a 2nd order polynomial is given by,

$$y_m = a_0 + a_1x + a_2x^2 \quad (2.1)$$

Where,

y_m = Model value

a_0, a_1 and a_2 = Unknown coefficients

If y_0 is the observed value and e is error or residual between the model and observation then

$$e = y_0 - y_m = y_0 - a_0 - a_1x - a_2x^2 \quad (2.2)$$

Now sum of the squares of the errors is,

$$S_r = \sum_{i=1}^n (y_i - a_0 - a_1x_i - a_2x_i^2)^2 \quad (2.3)$$

Taking derivative of equation (2.3) with respect to unknown coefficients a_0, a_1 and a_2

$$\frac{\partial S_r}{\partial a_0} = -2 \sum_{i=1}^n (y_i - a_0 - a_1 x_i - a_2 x_i^2) \quad (2.4)$$

$$\frac{\partial S_r}{\partial a_1} = -2 \sum_{i=1}^n x_i (y_i - a_0 - a_1 x_i - a_2 x_i^2) \quad (2.5)$$

$$\frac{\partial S_r}{\partial a_2} = -2 \sum_{i=1}^n x_i^2 (y_i - a_0 - a_1 x_i - a_2 x_i^2) \quad (2.6)$$

These above equations can be set equal to zero and rearranged to develop the following set of equations.

$$n a_0 + \left(\sum_{i=1}^n x_i \right) a_1 + \left(\sum_{i=1}^n x_i^2 \right) a_2 = \sum_{i=1}^n y_i \quad (2.7)$$

$$\left(\sum_{i=1}^n x_i \right) a_0 + \left(\sum_{i=1}^n x_i^2 \right) a_1 + \left(\sum_{i=1}^n x_i^3 \right) a_2 = \sum_{i=1}^n x_i y_i \quad (2.8)$$

$$\left(\sum_{i=1}^n x_i^2 \right) a_0 + \left(\sum_{i=1}^n x_i^3 \right) a_1 + \left(\sum_{i=1}^n x_i^4 \right) a_2 = \sum_{i=1}^n x_i^2 y_i \quad (2.9)$$

In matrix form, it can be written as,

$$[X][A] = [C] \quad (2.10)$$

Where,

$$[X] = \begin{bmatrix} n & \sum_{i=1}^n x_i & \sum_{i=1}^n x_i^2 \\ \sum_{i=1}^n x_i & \sum_{i=1}^n x_i^2 & \sum_{i=1}^n x_i^3 \\ \sum_{i=1}^n x_i^2 & \sum_{i=1}^n x_i^3 & \sum_{i=1}^n x_i^4 \end{bmatrix} \quad (2.11)$$

$$[A] = \begin{bmatrix} a_0 \\ a_1 \\ a_2 \end{bmatrix} \quad (2.12)$$

$$[C] = \begin{bmatrix} \sum_{i=1}^n y_i \\ \sum_{i=1}^n x_i y_i \\ \sum_{i=1}^n x_i^2 y_i \end{bmatrix} \quad (2.13)$$

So, a_0 , a_1 and a_2 can be determined using matrix inversion as,

$$[A] = [X]^{-1}[C] \quad (2.14)$$

2.4 Appropriateness of Using EMD on Electrical Load Data

The main motivation of EMD technique is to decompose any non-stationary time series data without using any predetermined bases (as is done in wavelet techniques and Fourier transform) which depend on the choice of a particular basis function. Furthermore, EMD is an adaptive method which is entirely empirical and preserves the distinct characteristics in the separate IMFs and the residue. It is particularly powerful for time

series data that are non-stationary and non linear and has been successfully applied in many engineering fields.

Electrical load has different components such as seasonal patterns, high variability and fluctuations and short- and long-term trends. Each component has different characteristics and has certain certainty in its nature. Applying EMD, the historical electrical load can be decomposed into different components namely IMFs and the residue. These components represent the different patterns such as seasonal, high variability and fluctuations and short- and long-term trends of the original load data. Hence it is expected that forecasting IMFs and residue of the historical load data would better forecast the load trends and the consumption behaviors.

2.5 Long-Term Load Forecasting Methodology Using EMD

EMD technique can be applied to data with non-zero mean, either all positive or all negative values, without zero crossings. Electrical load is data set with all positive values. But the data has local extremas, i.e. local maxima and local minima. So, EMD technique can be used to decompose the electrical load into several components.

At first, the electrical load data are decomposed into a number of IMFs and a residue using EMD technique. In the next step, daily, weekly and monthly ratios of each IMF and the residue are evaluated. The ratios are defined as follows.

Daily Ratio (DR): For any IMF, it is the ratio between the daily peak value of that IMF and the respective weekly peak value of that IMF.

Weekly Ratio (WR): For any IMF, it is the ratio between the weekly peak value of that IMF and the respective monthly peak value of that IMF.

Monthly Ratio (MR): For any IMF, it is the ratio between the monthly peak value of that IMF and the respective yearly peak value of that IMF.

After calculating the daily, weekly and monthly ratios of each IMF and the residue, their expected values are calculated. Then a ratio factor for each day of each IMF and residue is calculated by multiplying corresponding expected daily, weekly and monthly ratios. In the next step, the annual peak value of each IMF and the residue are forecasted using least square 2nd order polynomial regression. These forecasted values are multiplied with corresponding ratio factor of each day to forecast the daily peak values of each IMF and the residue. Finally, the forecasting of electrical load is obtained by summing up the forecasted IMFs and the residue. Different steps of the proposed methodologies are presented below.

Step 1: Decomposition of Load Data

EMD technique is applied to decompose the historical load data. After applying EMD on daily peak load data of a particular year, there will a number of IMFs and residue. It can be written as,

$$L(t) = \sum_{i=1}^n IMF_i(t) + Re(t) \quad (2.15)$$

Where,

$L(t)$ = Original load data

$IMF_i(t)$ = i-th IMF of load data

n = Total no. of IMFs

$Re(t)$ = Residue of load data

Step 2: Calculation of Daily Ratio

For i-th IMF, daily ratio of j-th day of k-th week of l-th month of m-th year is calculated as,

$$DR_{ijklm} = \frac{DP_{ijklm}}{WP_{iklm}} \quad (2.16)$$

Where,

DR_{ijklm} = Daily ratio of i-th IMF of j-th day of k-th week of l-th month of m-th year

DP_{ijklm} = Peak value of i-th IMF of j-th day of k-th week of l-th month of m-th year

WP_{iklm} = Peak value of i-th IMF of k-th week of l-th month of m-th year

Now the expected or mean daily ratio of i-th IMF of j-th day is calculated as,

$$E(DR_{ij}) = \frac{1}{N} \sum_{m=1}^{m=N} DR_{ijklm} \quad (2.17)$$

Where,

$E(DR_{ij})$ = Expected daily ratio of i-th IMF of j-th day

DR_{ijklm} = Daily ratio of i-th IMF of j-th day of k-th week of l-th month of m-th year

N = No. of years considered for historical data

The daily ratios and its expected value of the residue of the load data are also calculated using the above process.

Step 3: Calculation of Weekly Ratio

For i-th IMF, weekly ratio of k-th week of l-th month of m-th year is calculated as,

$$WR_{iklm} = \frac{WP_{iklm}}{MP_{ilm}} \quad (2.18)$$

Where,

WR_{iklm} = Weekly ratio of i-th IMF of k-th week of l-th month of m-th year

WP_{iklm} = Peak value of i-th IMF of k-th week of l-th month of m-th year

MP_{ilm} = Peak value of i-th IMF of l-th month of m-th year

Now the expected or mean weekly ratio of i-th IMF of k-th week is calculated as,

$$E(WR_{ik}) = \frac{1}{N} \sum_{m=1}^{m=N} WR_{iklm} \quad (2.19)$$

Where,

$E(WR_{ik})$ = Expected weekly ratio of i-th IMF of k-th week

WR_{iklm} = Weekly ratio of i-th IMF of k-th week of l-th month of m-th year

N = No. of years considered for historical data

The weekly ratios and its expected value of the residue of the load data are also calculated using the above process.

Step 4: Calculation of Monthly Ratio

For i-th IMF, monthly ratio of l-th month of m-th year is calculated as,

$$MR_{ilm} = \frac{MP_{ilm}}{YP_{im}} \quad (2.20)$$

Where,

MR_{ilm} = Monthly ratio of i-th IMF of l-th month of m-th year

$MP_{i\ l\ m}$ = Peak value of i-th IMF of l-th month of m-th year

$YP_{i\ m}$ = Peak value of i-th IMF of m-th year

Now the expected or mean monthly ratio of i-th IMF is calculated as,

$$E(MR_{i\ l}) = \frac{1}{N} \sum_{m=1}^{m=N} MR_{i\ l\ m} \quad (2.21)$$

Where,

$E(MR_{i\ l})$ = Expected monthly ratio of i-th IMF of l-th month

$MR_{i\ l\ m}$ = Monthly ratio of i-th IMF of l-th month of m-th year

N = No. of years considered for historical data

The weekly ratios and its expected value of the residue of the load signal are also calculated using the above process.

Step 5: Calculation of Ratio Factor

A ratio factor of each day for each IMF and the residue is calculated by multiplying corresponding $E(DR_{i\ j})$, $E(WR_{i\ k})$ and $E(MR_{i\ l})$.

For i-th IMF, the ratio factor of j-th day is calculated as,

$$RF_{i\ j} = E(DR_{i\ j}) \times E(WR_{i\ k}) \times E(MR_{i\ l}) \quad (2.22)$$

Where,

$RF_{i\ j}$ = Ratio factor of i-th IMF of j-th day

$E(DR_{i\ j})$ = Expected daily ratio of i-th IMF of j-th day

$E(WR_{i\ k})$ = Expected weekly ratio of i-th IMF of corresponding k-th week

$E(MR_{i\ l})$ = Expected monthly ratio of i-th IMF of corresponding l-th month

Step 6: Forecasting of Annual Peak Value of IMFs and Residue

The annual peak value of each IMF and the residue are forecasted using least square 2nd order polynomial regression.

Step 7: Forecasting of Daily Peak Value of IMFs and Residue

The daily peak value of i-th IMF of j-th day for a future q-th year is forecasted using,

$$FDP_{IMF\ i\ j\ q} = RF_{ij} \times FYP_{IMF\ i\ q} \quad (2.23)$$

Where,

$FDP_{IMF\ i\ j\ q}$ = Forecasted daily peak value of i-th IMF of j-th day of q-th year

RF_{ij} = Ratio factor of i-th IMF of j-th day

$FYP_{IMF\ i\ q}$ = Forecasted annual peak value of i-th IMF of q-th year

The daily peak value of the residue is also forecasted using the above process.

Step 8: Forecasting of Daily Peak Load

Daily peak load of j-th day a future q-th year is forecasted using,

$$FDPL_{jq} = \sum_{i=1}^n FDP_{IMF\ i\ j\ q} + FDP_{res\ j\ q} \quad (2.24)$$

Where,

$FDPL_{jq}$ = Forecasted daily peak load of j-th day of q-th year

$FDP_{IMF\ i\ j\ q}$ = Forecasted daily peak value of i-th IMF of j-th day of q-th year

n = Total no. of IMFs

$FDP_{res\ j\ q}$ = Forecasted daily peak value of the residue of j-th day of q-th year

The whole process is presented in the flow chart below.

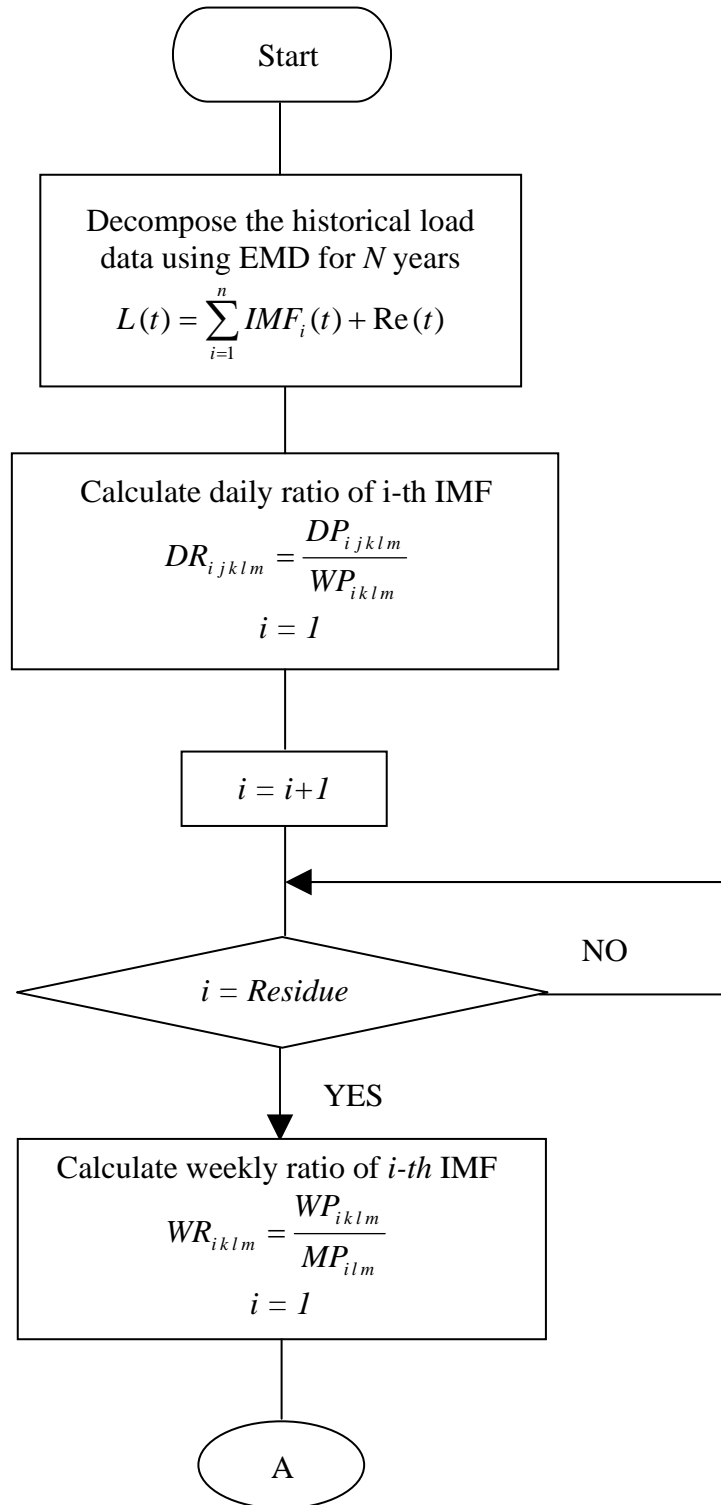


Figure 2.1 (a): Flow chart of the proposed load forecasting methodology

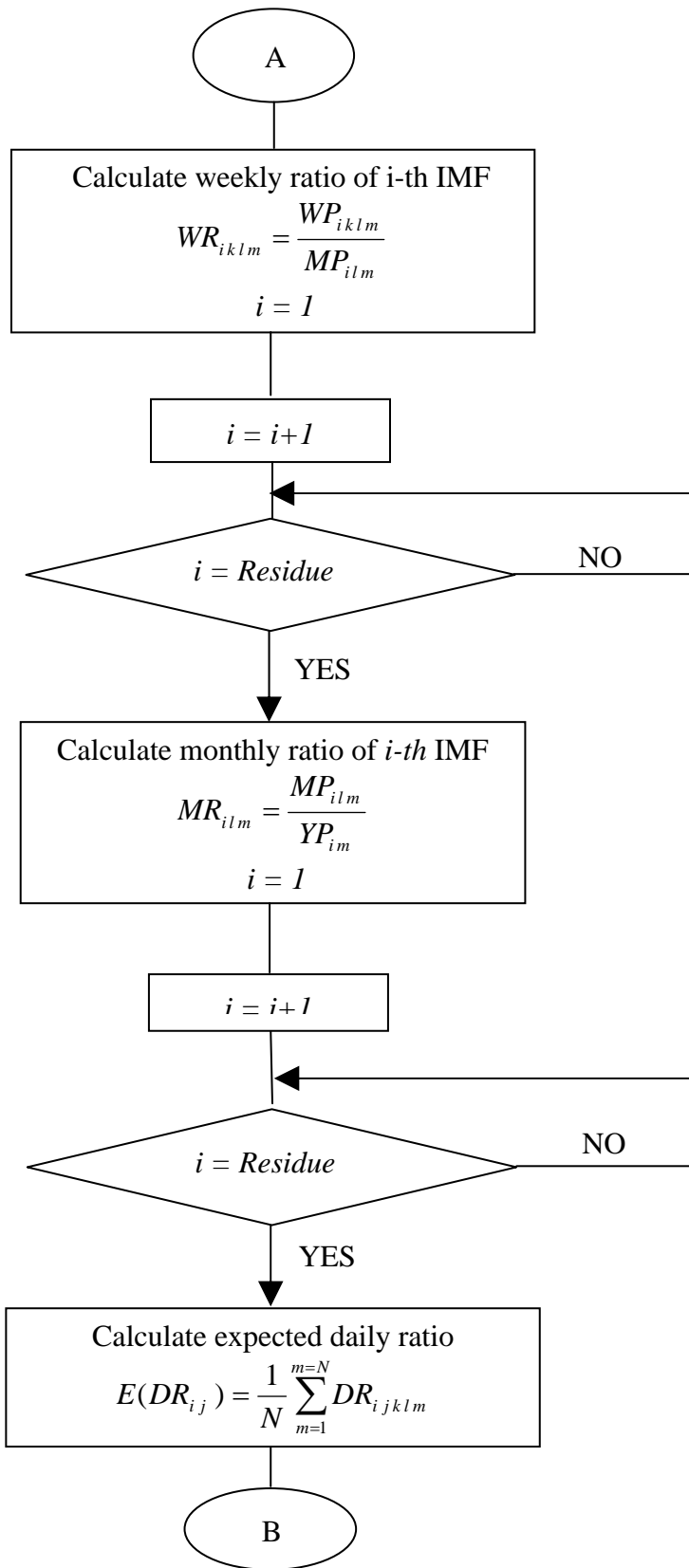


Figure 2.1 (b): Flow chart of the proposed load forecasting methodology (Continued)

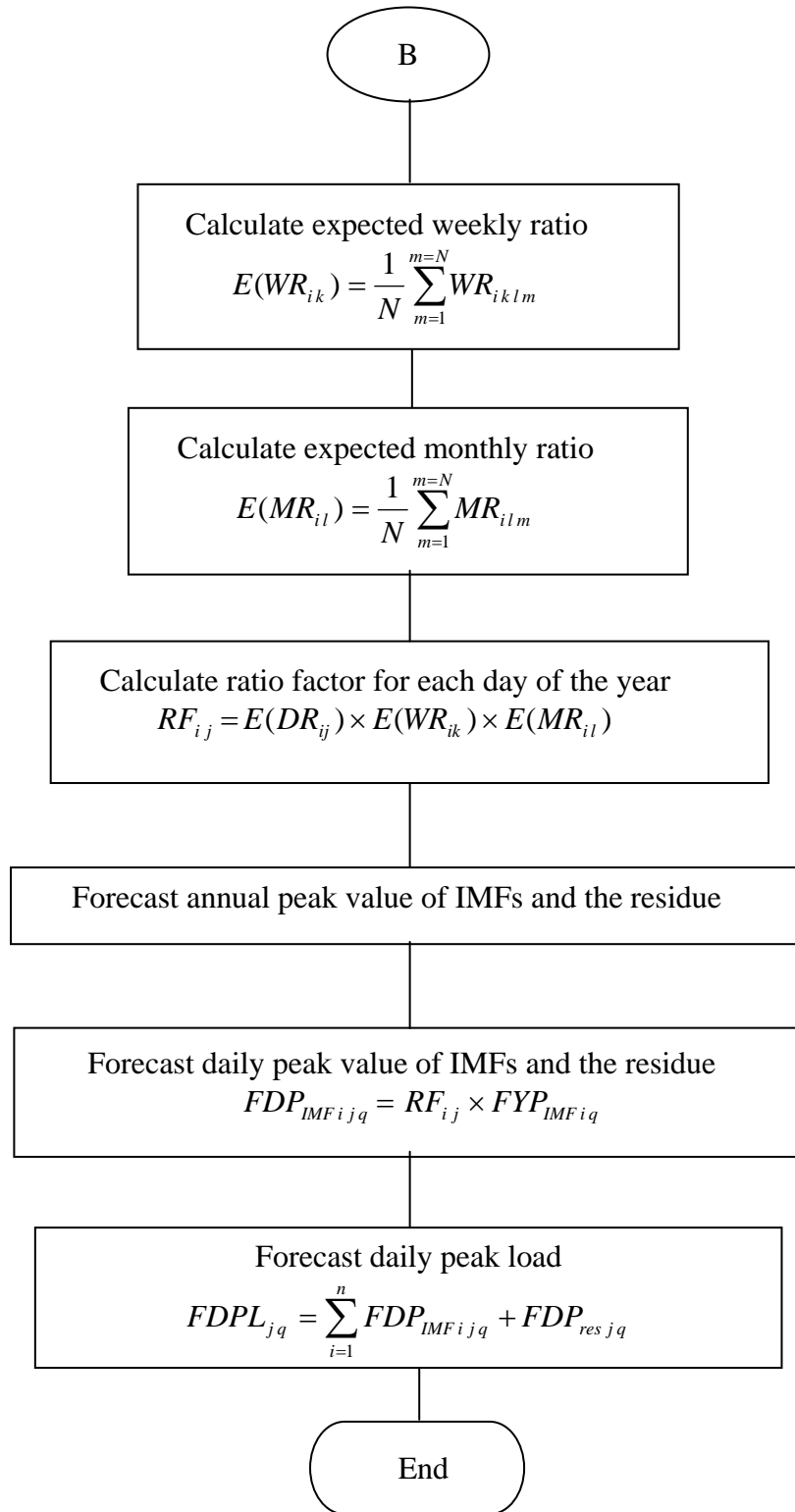


Figure 2.1 (c): Flow chart of the proposed load forecasting methodology (Continued)

2.6 Validation of the Proposed Methodology

The proposed methodology is validated by,

- i) Statistical error evaluation and
- ii) Comparison with other techniques

2.6.1 Statistical Error Evaluation

In this process, the peak loads of previous years are reconstructed using the proposed methodology. The reconstructed values are compared with the actual values and mean absolute percentage error is calculated using,

$$MAPE = \frac{1}{N_t} \sum \left[\frac{|L_{act} - L_{rect}|}{L_{act}} \times 100\% \right] \quad (2.25)$$

Where,

$MAPE$ = Mean absolute percentage error

L_{act} = Actual daily peak load

L_{rect} = Reconstructed daily peak load

N_t = Total number of days in a year

Using the proposed methodology, the daily peak load of BPS of last 12 years, that is, from year 2001 to 2012 are reconstructed. The MAPEs are calculated using equation (2.25). The results are shown in Table 2.1.

It is observed from above table that MAPE using proposed methodology is around 5%.

So it can be concluded that the proposed methodology results in better forecasting.

The reconstructed load using the proposed methodology and the actual load of BPS from year 2001 to 2012 is shown in Figure 2.2. It is depicted that the actual and the reconstructed daily peak load are close to each other.

Table 2.1: MAPE using the proposed methodology

Year	MAPE (%)
2001	5.01
2002	5.24
2003	5.17
2004	4.87
2005	4.89
2006	5.05
2007	4.52
2008	4.68
2009	4.32
2010	4.35
2011	4.19
2012	4.22

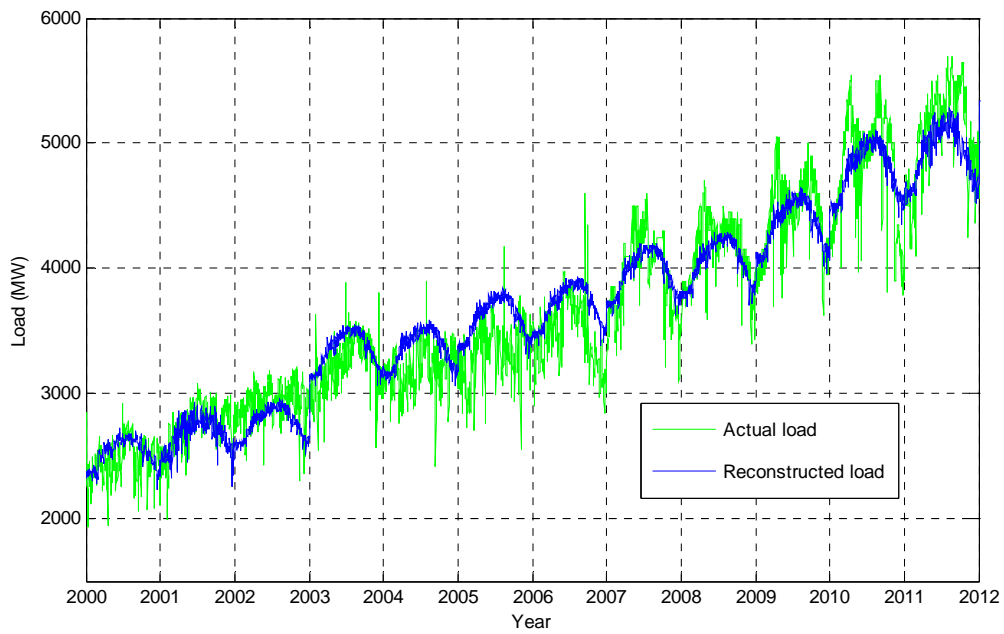


Figure 2.2: Actual and reconstructed load of BPS of last 12 years

2.6.2 Comparison with Other Techniques

The peak loads of BPS of last 12 years are reconstructed using the proposed methodology and the methods presented in [31] and [32]. The reconstructed load of BPS of year 2012, using different methods, is depicted in Figure 2.3.

The MAPEs of the last 12 years using these three methods are shown in Figure 2.4. It is clearly observed from the figures that the proposed methodology gives the results closer to the realistic one than the methods described in [31] and [32].

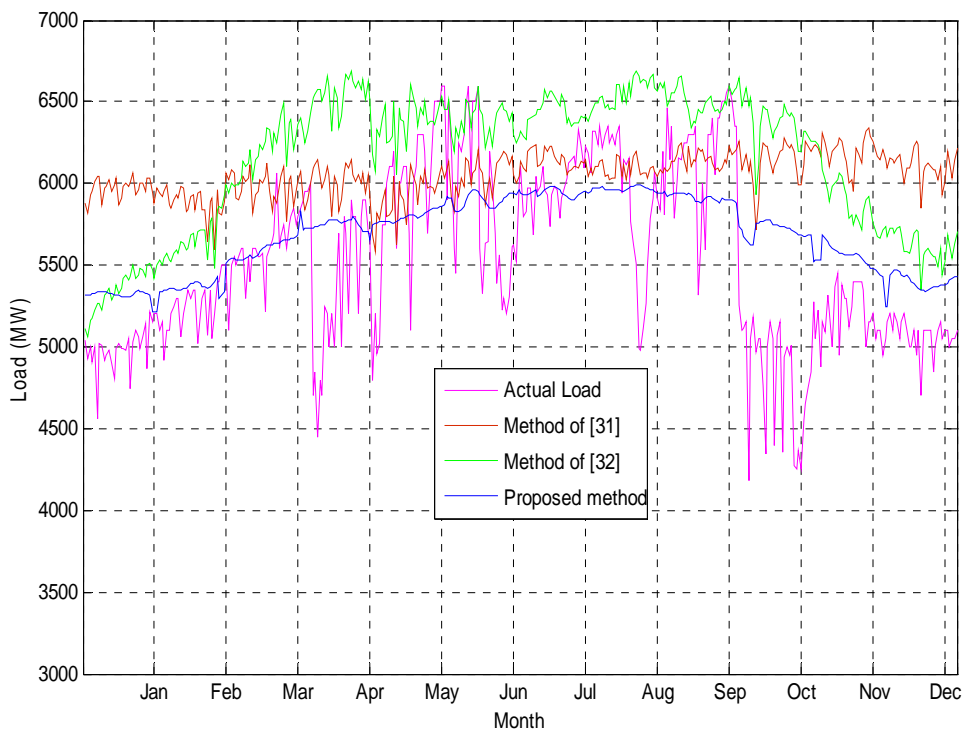


Figure 2.3: Reconstructed load using different methods

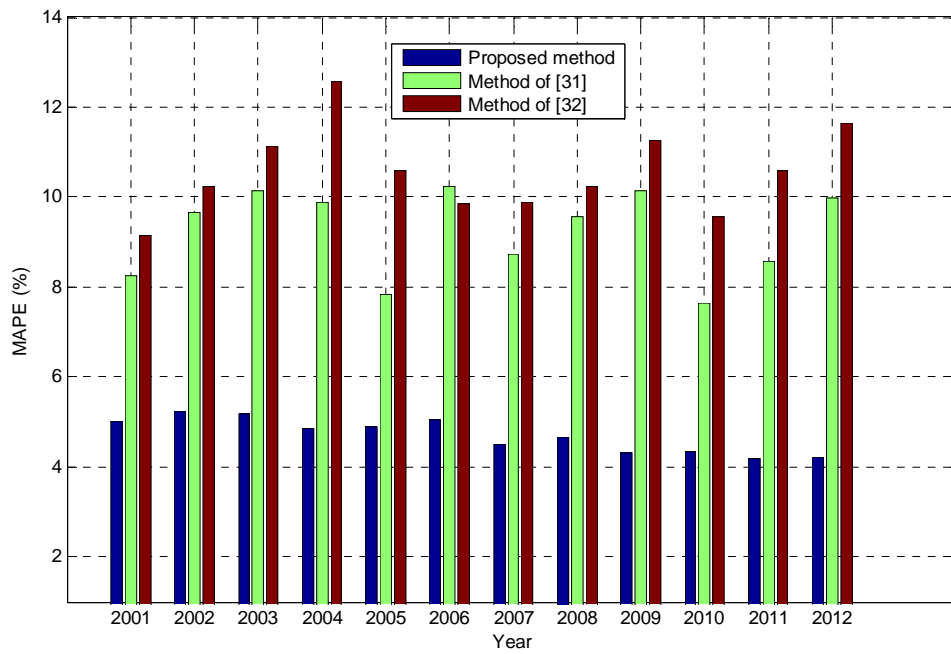


Figure 2.4: Comparison of MAPE between proposed methodology and other techniques

CHAPTER 3
HISTORICAL LOAD DATA OF BPS

3.1 Introduction

Forecasting of electrical load mainly depends on the past data. That is, the future load is usually forecasted on the basis of previous historical load data. This chapter presents the past historical data of daily peak load of BPS.

3.2 Collection of Daily Peak Load Data

The daily peak load data of BPS are collected for last 12 years, that is, from year 2001 to 2012. The data have been collected from National Load Dispatch Center (NLDC) of Power Grid Company of Bangladesh (PGCB) Limited.

3.3 Reliability of the Collected Data

In the NLDC, the load data are recorded at every hour by reading the energy meters located in it. Data is stored in their own data base in soft form. Though there is little chance of error in the recording process of the load data, but the loads of the some hours of the day do not represent the actual system demand, because in most of the cases, peak demand is shaved by load shedding due to shortage of generation capacity. The amount of load reduced due to load shedding was not recorded in past but in recent years NLDC records the load shedding data though there is some reasonable doubt in recorded load shedding data. The actual peak load is the demand served plus the shedded load. Therefore it can be concluded that the recent data are more reliable than that of previous years, from 2001 to 2007.

3.4 Sample Data

In this section, the daily peak load of BPS year 2012 is presented in Table 3.1 as a sample.

Table 3.1: Daily peak load of BPS of year 2012

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
1-Jan-12	5036.50	1-Apr-12	5850.00	1-Jul-12	6000.00	1-Oct-12	5250.86
2-Jan-12	4930.00	2-Apr-12	5900.00	2-Jul-12	6100.00	2-Oct-12	5099.92
3-Jan-12	5000.00	3-Apr-12	5950.00	3-Jul-12	5799.00	3-Oct-12	5107.92
4-Jan-12	4907.00	4-Apr-12	5950.00	4-Jul-12	5829.00	4-Oct-12	5150.52
5-Jan-12	5000.00	5-Apr-12	6000.00	5-Jul-12	5976.00	5-Oct-12	4182.00
6-Jan-12	4559.00	6-Apr-12	4704.00	6-Jul-12	5976.00	6-Oct-12	5050.83
7-Jan-12	5018.00	7-Apr-12	4850.00	7-Jul-12	5688.00	7-Oct-12	5179.83
8-Jan-12	5011.00	8-Apr-12	4445.00	8-Jul-12	6043.00	8-Oct-12	4964.83
9-Jan-12	4914.00	9-Apr-12	4800.00	9-Jul-12	5956.00	9-Oct-12	5050.71
10-Jan-12	4950.00	10-Apr-12	4700.00	10-Jul-12	5985.00	10-Oct-12	5049.90
11-Jan-12	4983.00	11-Apr-12	5250.00	11-Jul-12	6100.00	11-Oct-12	4760.45
12-Jan-12	4900.00	12-Apr-12	5200.00	12-Jul-12	5963.00	12-Oct-12	4349.92
13-Jan-12	4803.00	13-Apr-12	5000.00	13-Jul-12	5933.00	13-Oct-12	5000.28
14-Jan-12	4993.00	14-Apr-12	5200.00	14-Jul-12	5734.00	14-Oct-12	5150.45
15-Jan-12	5024.50	15-Apr-12	5000.00	15-Jul-12	5926.00	15-Oct-12	5050.83
16-Jan-12	4994.00	16-Apr-12	5500.00	16-Jul-12	5985.00	16-Oct-12	4399.00
17-Jan-12	4992.50	17-Apr-12	5700.00	17-Jul-12	5960.00	17-Oct-12	5075.80
18-Jan-12	4977.00	18-Apr-12	5000.00	18-Jul-12	5792.00	18-Oct-12	5150.17
19-Jan-12	5053.00	19-Apr-12	5800.00	19-Jul-12	5907.00	19-Oct-12	4360.00
20-Jan-12	4741.00	20-Apr-12	5700.00	20-Jul-12	5973.00	20-Oct-12	4939.10
21-Jan-12	5028.00	21-Apr-12	5200.00	21-Jul-12	6030.00	21-Oct-12	5000.27
22-Jan-12	5100.00	22-Apr-12	5900.00	22-Jul-12	6124.00	22-Oct-12	4950.36
23-Jan-12	5057.00	23-Apr-12	5800.00	23-Jul-12	6144.00	23-Oct-12	5009.36
24-Jan-12	4989.00	24-Apr-12	5800.00	24-Jul-12	6169.00	24-Oct-12	4272.00
25-Jan-12	5060.00	25-Apr-12	5200.00	25-Jul-12	6100.00	25-Oct-12	4254.00
26-Jan-12	5145.50	26-Apr-12	5800.00	26-Jul-12	6334.00	26-Oct-12	4368.00
27-Jan-12	4872.00	27-Apr-12	5900.00	27-Jul-12	6229.00	27-Oct-12	4258.00
28-Jan-12	5214.00	28-Apr-12	5900.00	28-Jul-12	6099.00	28-Oct-12	4550.00
29-Jan-12	5150.00	29-Apr-12	5700.00	29-Jul-12	6226.00	29-Oct-12	4650.00
30-Jan-12	5200.00	30-Apr-12	5700.00	30-Jul-12	6187.00	30-Oct-12	4750.00
31-Jan-12	5200.00	1-May-12	4800.00	31-Jul-12	6062.00	31-Oct-12	4850.00
1-Feb-12	5100.00	2-May-12	5200.00	1-Aug-12	6320.00	1-Nov-12	5272.00
2-Feb-12	5150.00	3-May-12	4958.00	2-Aug-12	6318.00	2-Nov-12	5050.00
3-Feb-12	4916.00	4-May-12	5017.00	3-Aug-12	6241.00	3-Nov-12	5228.00
4-Feb-12	5100.00	5-May-12	5750.00	4-Aug-12	6350.00	4-Nov-12	4879.00
5-Feb-12	5100.00	6-May-12	5750.00	5-Aug-12	6216.00	5-Nov-12	5153.00

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
6-Feb-12	5200.00	7-May-12	6000.00	6-Aug-12	6300.00	6-Nov-12	5090.00
7-Feb-12	5250.00	8-May-12	6100.00	7-Aug-12	6350.00	7-Nov-12	5320.00
8-Feb-12	5300.00	9-May-12	6100.00	8-Aug-12	6247.00	8-Nov-12	5218.00
9-Feb-12	5300.00	10-May-12	6200.00	9-Aug-12	6300.00	9-Nov-12	5000.00
10-Feb-12	5064.50	11-May-12	5600.00	10-Aug-12	6240.00	10-Nov-12	5373.00
11-Feb-12	5200.00	12-May-12	6000.00	11-Aug-12	6300.00	11-Nov-12	5450.00
12-Feb-12	5300.00	13-May-12	6000.00	12-Aug-12	6350.00	12-Nov-12	4947.00
13-Feb-12	5350.00	14-May-12	6100.00	13-Aug-12	5938.00	13-Nov-12	5375.00
14-Feb-12	5300.00	15-May-12	6100.00	14-Aug-12	6150.00	14-Nov-12	5300.00
15-Feb-12	5350.00	16-May-12	5700.00	15-Aug-12	6115.00	15-Nov-12	5300.00
16-Feb-12	5350.00	17-May-12	5100.00	16-Aug-12	6152.00	16-Nov-12	5125.00
17-Feb-12	5021.00	18-May-12	6000.00	17-Aug-12	5770.00	17-Nov-12	5250.00
18-Feb-12	5200.00	19-May-12	6100.00	18-Aug-12	5634.00	18-Nov-12	5400.00
19-Feb-12	5300.00	20-May-12	6300.00	19-Aug-12	5511.00	19-Nov-12	5400.00
20-Feb-12	5350.00	21-May-12	6300.00	20-Aug-12	4993.00	20-Nov-12	5400.00
21-Feb-12	5075.00	22-May-12	6300.00	21-Aug-12	4979.00	21-Nov-12	5400.00
22-Feb-12	5350.00	23-May-12	6200.00	22-Aug-12	5114.00	22-Nov-12	5350.00
23-Feb-12	5048.00	24-May-12	5700.00	23-Aug-12	5270.00	23-Nov-12	5000.00
24-Feb-12	5200.00	25-May-12	6000.00	24-Aug-12	5486.00	24-Nov-12	5150.00
25-Feb-12	5400.00	26-May-12	6350.00	25-Aug-12	5790.00	25-Nov-12	5150.00
26-Feb-12	5400.00	27-May-12	6500.00	26-Aug-12	5910.00	26-Nov-12	5200.00
27-Feb-12	5500.00	28-May-12	6500.00	27-Aug-12	6079.00	27-Nov-12	5050.00
28-Feb-12	5500.00	29-May-12	6500.00	28-Aug-12	5906.00	28-Nov-12	5100.00
29-Feb-12	5550.00	30-May-12	6600.00	29-Aug-12	5842.00	29-Nov-12	5100.00
1-Mar-12	5500.00	31-May-12	6600.00	30-Aug-12	6200.00	30-Nov-12	4950.00
2-Mar-12	5104.00	1-Jun-12	5900.00	31-Aug-12	5805.00	1-Dec-12	5050.00
3-Mar-12	5500.00	2-Jun-12	6500.00	1-Sep-12	6464.00	2-Dec-12	5150.00
4-Mar-12	5550.00	3-Jun-12	6200.00	2-Sep-12	6150.00	3-Dec-12	5200.00
5-Mar-12	5500.00	4-Jun-12	5600.00	3-Sep-12	6350.00	4-Dec-12	5100.00
6-Mar-12	5550.00	5-Jun-12	5450.00	4-Sep-12	5788.00	5-Dec-12	5200.00
7-Mar-12	5600.00	6-Jun-12	6250.00	5-Sep-12	6000.00	6-Dec-12	5150.00
8-Mar-12	5600.00	7-Jun-12	6200.00	6-Sep-12	6156.00	7-Dec-12	5050.00
9-Mar-12	5300.00	8-Jun-12	6300.00	7-Sep-12	6150.00	8-Dec-12	5150.00
10-Mar-12	5550.00	9-Jun-12	6450.00	8-Sep-12	6250.00	9-Dec-12	5200.00
11-Mar-12	5400.00	10-Jun-12	6600.00	9-Sep-12	6250.00	10-Dec-12	5100.00
12-Mar-12	5600.00	11-Jun-12	6000.00	10-Sep-12	6300.00	11-Dec-12	5000.00
13-Mar-12	5600.00	12-Jun-12	6500.00	11-Sep-12	6302.00	12-Dec-12	5000.00
14-Mar-12	5550.00	13-Jun-12	6500.00	12-Sep-12	6300.00	13-Dec-12	5100.00
15-Mar-12	5550.00	14-Jun-12	6600.00	13-Sep-12	6350.00	14-Dec-12	4950.00
16-Mar-12	5569.00	15-Jun-12	5600.00	14-Sep-12	5313.00	15-Dec-12	5100.00
17-Mar-12	5212.00	16-Jun-12	5331.00	15-Sep-12	5654.00	16-Dec-12	4701.00
18-Mar-12	5550.00	17-Jun-12	5635.00	16-Sep-12	6000.00	17-Dec-12	5100.00
19-Mar-12	5600.00	18-Jun-12	5641.00	17-Sep-12	5589.00	18-Dec-12	5100.00
20-Mar-12	5650.00	19-Jun-12	6200.00	18-Sep-12	6300.00	19-Dec-12	5100.00
21-Mar-12	5700.00	20-Jun-12	6000.00	19-Sep-12	6300.00	20-Dec-12	5100.00

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
22-Mar-12	6065.50	21-Jun-12	5700.00	20-Sep-12	6400.00	21-Dec-12	4850.00
23-Mar-12	5600.00	22-Jun-12	5393.00	21-Sep-12	6050.00	22-Dec-12	5000.00
24-Mar-12	5675.00	23-Jun-12	5558.00	22-Sep-12	6400.00	23-Dec-12	5100.00
25-Mar-12	5750.00	24-Jun-12	5224.00	23-Sep-12	6400.00	24-Dec-12	5150.00
26-Mar-12	5600.00	25-Jun-12	5300.00	24-Sep-12	6500.00	25-Dec-12	5050.00
27-Mar-12	5750.00	26-Jun-12	5201.00	25-Sep-12	6500.00	26-Dec-12	5100.00
28-Mar-12	5800.00	27-Jun-12	5307.00	26-Sep-12	6550.00	27-Dec-12	5100.00
29-Mar-12	5850.00	28-Jun-12	5614.00	27-Sep-12	6600.00	28-Dec-12	5000.00
30-Mar-12	5750.00	29-Jun-12	5628.00	28-Sep-12	6500.00	29-Dec-12	5050.00
31-Mar-12	5800	30-Jun-12	5518.00	29-Sep-12	6350.00	30-Dec-12	5050.00
				30-Sep-12	6350.00	31-Dec-12	5100.00

CHAPTER 4
RESULTS AND ANALYSIS

4.1 Introduction

The proposed methodology is applied to forecast the daily peak load of BPS for the period of next 10 years, that is, from year 2013 to 2022. The proposed methodology is validated through the development of the past years daily peak loads. The accuracy of results is also verified through statistical error evaluation process and comparing the results with other techniques.

In what follows, the detail results of all of the steps associated with the forecasting of electrical load, the forecasted demand of BPS and the validation of the proposed method are presented.

4.2 Decomposition of Load Data

The proposed methodology is applied on the historical load data of BPS for the period of last 12 years, that is, from year 2001 to 2012. Using EMD technique, the daily peak load of a particular year is decomposed into a number of IMFs and a residue. Using the stopping criteria mentioned in Section 2.2 of Chapter 2, the daily peak load data set of a year is segregated into 6 IMFS, namely, IMF1, IMF2, IMF3, IMF4, IMF5, IMF6, and a residue. For example, the daily peak load of year 2012 and its different IMFs and residue are shown in Figures 4.1 to 4.8.

Similarly, the daily peak load from year 2001 to year 2011 can be divided into several IMFs and the residue. After decomposing, the different IMFs and the residue are forecasted separately using the method described in chapter 2.

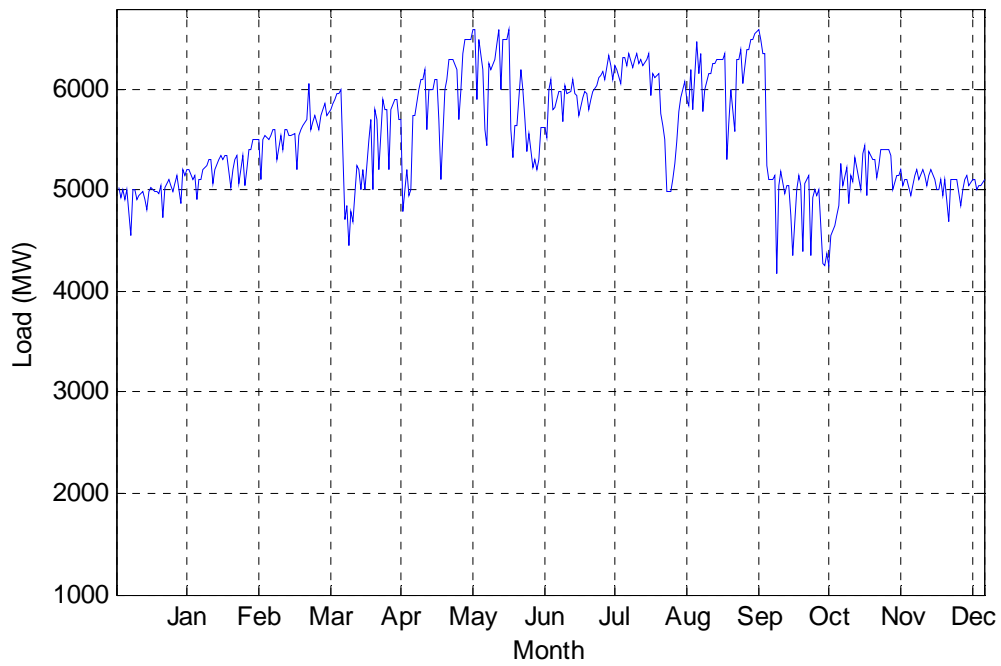


Figure 4.1: Daily peak load data of year 2012

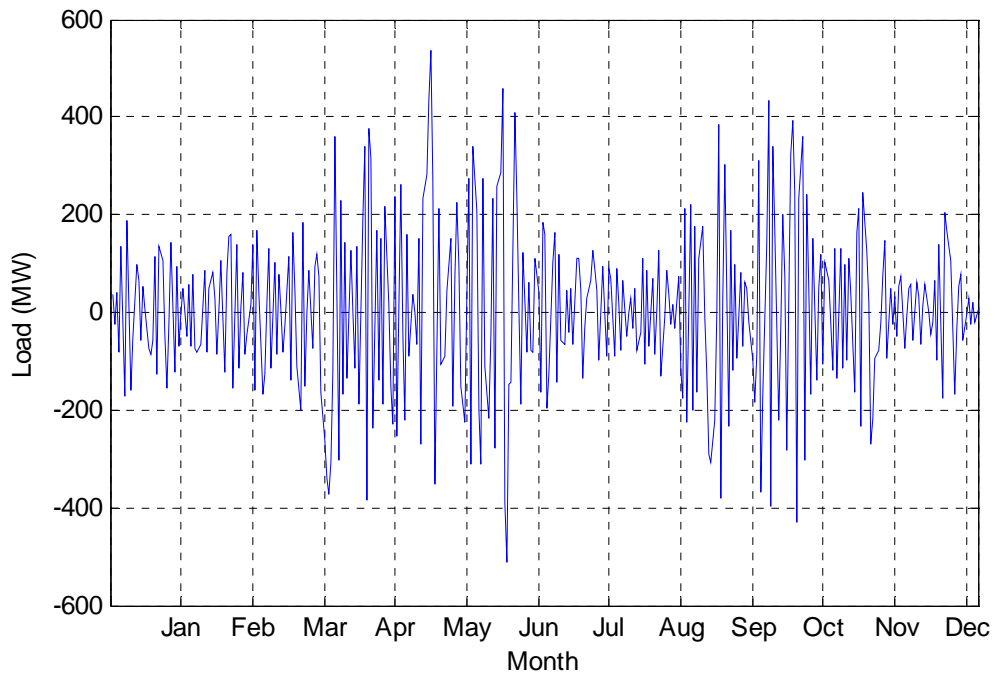


Fig 4.2: IMF1 (1st IMF) of the daily peak load data of the year 2012

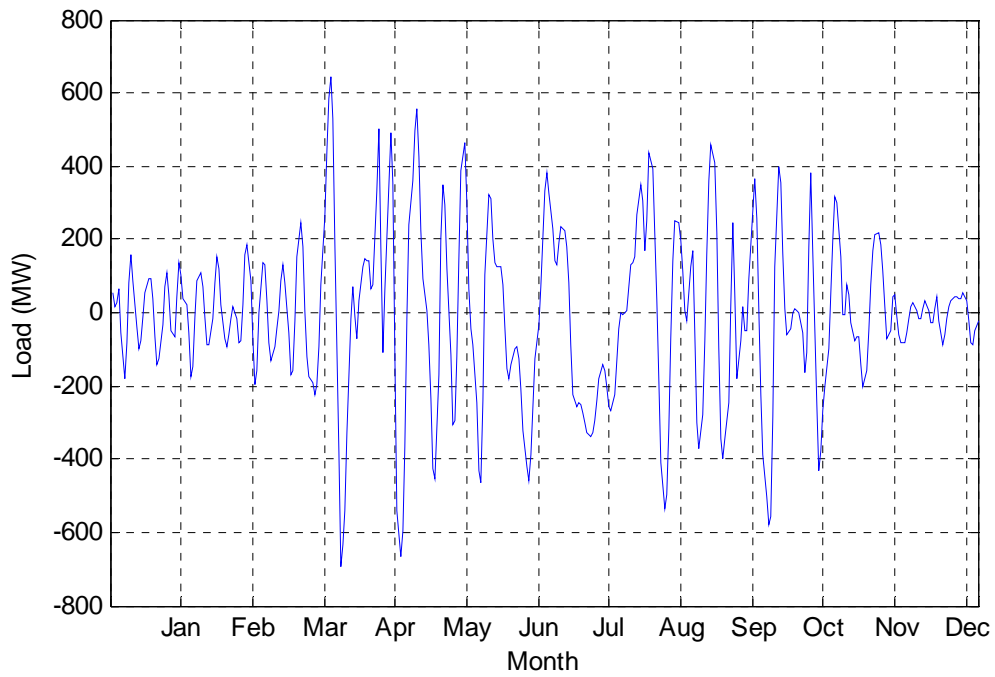


Fig 4.3: IMF2 (2nd IMF) of the daily peak load data of the year 2012

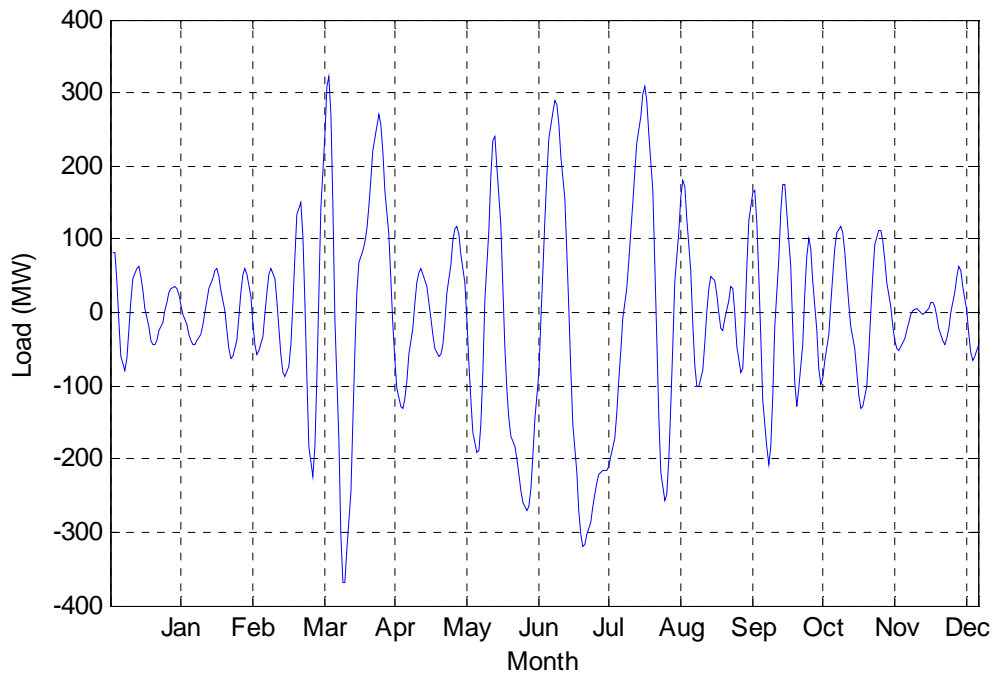


Fig 4.4: IMF3 (3rd IMF) of the daily peak load data of the year 2012

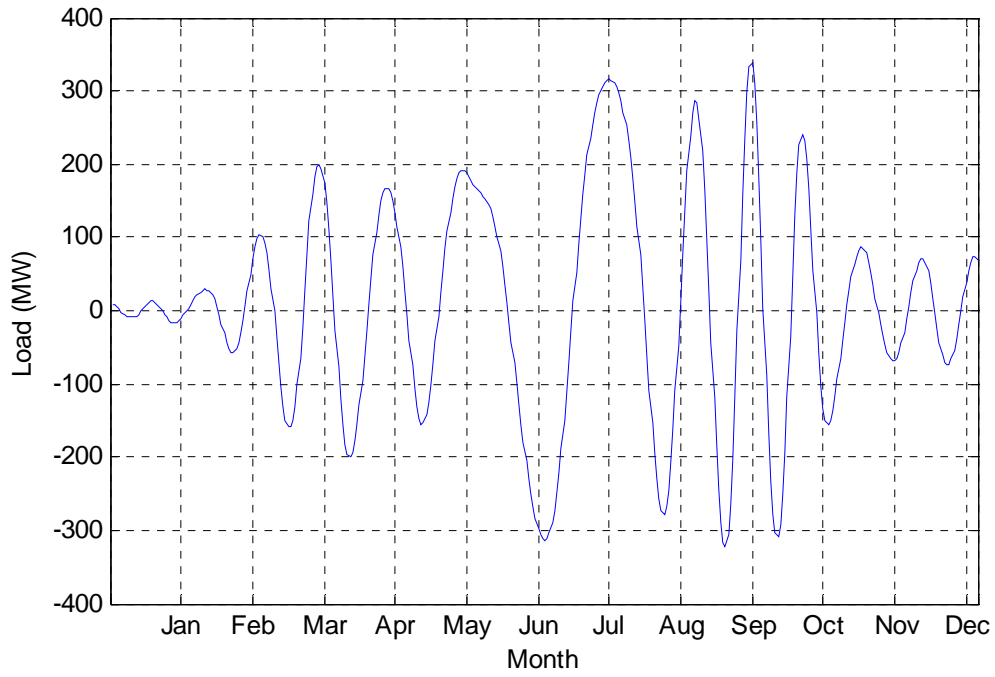


Fig 4.5: IMF4 (4th IMF) of the daily peak load data of the year 2012

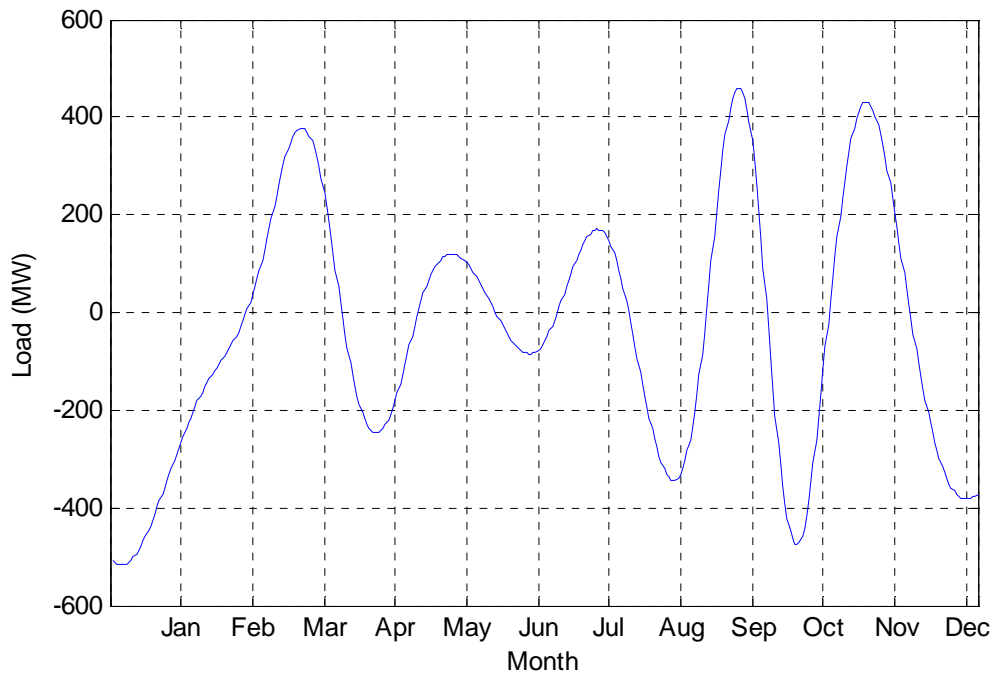


Fig 4.6: IMF5 (5th IMF) of the daily peak load data of the year 2012

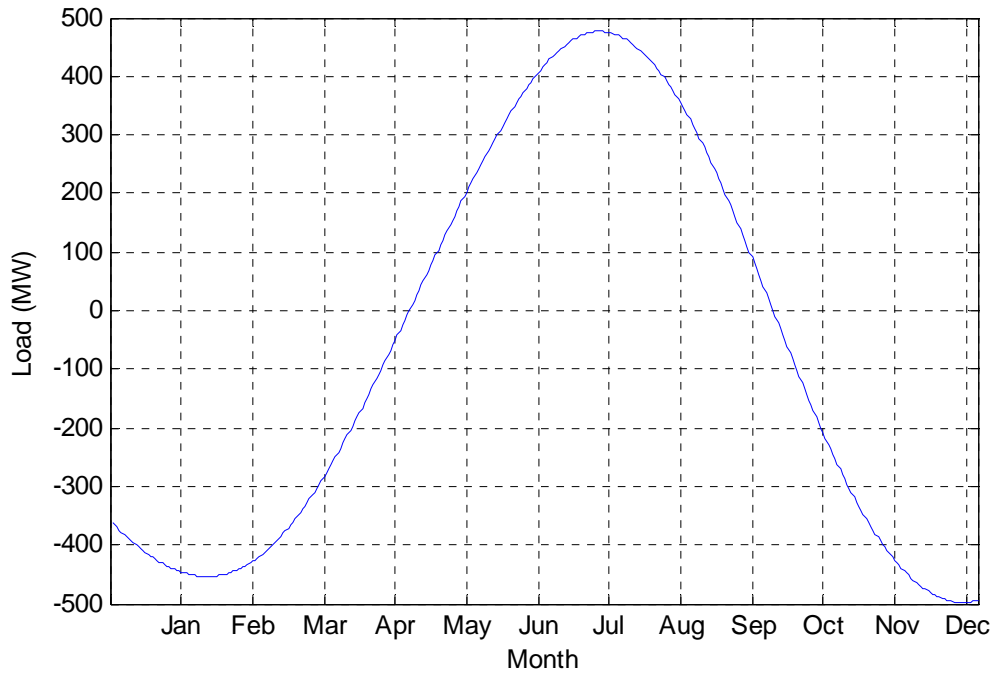


Fig 4.7: IMF6 (6th IMF) of the daily peak load data of the year 2012

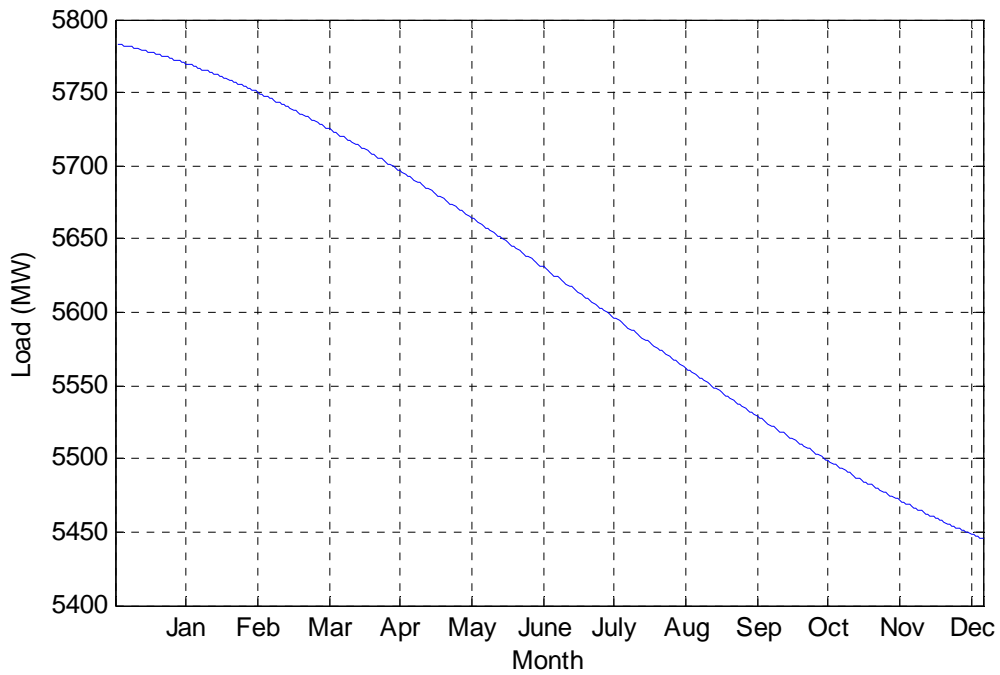


Fig 4.8: Residue of the daily peak load data of the year 2012

The time period of the different IMFs and the residue is calculated using,

$$Time\ period = \frac{Data\ length}{No.\ of\ local\ maximum} \quad (4.1)$$

The time period of different IMFs and the residue is calculated for different years. Then the mean value is calculated. Table 4.1 shows the results.

Table 4.1: Mean time period

Component	Mean time period (days)
IMF1	3.54
IMF2	7.60
IMF3	14.03
IMF4	28.07
IMF5	45.63
IMF6	121.67
Residue	365.00

It is observed from above table that IMF1 and IMF2 are the relatively higher frequency components and hence they can be neglected in long-term load forecasting process [35].

If the stopping criteria of the sifting algorithm are varied, the number of high frequency IMF increases. Since the high frequency IMFs are being neglected, the variation of stopping criteria has no impact in long-term load forecasting process.

So the daily peak load is forecasted by summing up the forecasted results of IMF3, IMF4, IMF5, IMF6 and the residue.

4.3 Daily Ratios

The daily ratios of different IMFs and the residue are calculated using equation (2.16) for the period of last 12 years, that is, from year 2001 to the year 2012. The expected daily

ratios of different IMFs and the residue are calculated using equation (2.17). The expected daily ratios for month of January shown in the Table 4.2. The complete result is enclosed in Appendix (Table A1).

Table 4.2: Expected daily ratios of IMFs and the residue for the month of January

Date	IMF3	IMF4	IMF5	IMF6	Residue
1-Jan	0.0382	-0.1931	-0.2261	-0.0091	0.9988
2-Jan	-0.0562	-0.2361	-0.1394	0.0055	0.9988
3-Jan	-0.1105	-0.2245	-0.0606	0.0164	0.9988
4-Jan	-0.1034	-0.1703	-0.0003	0.0237	0.9988
5-Jan	-0.0315	-0.0938	0.0365	0.0274	0.9989
6-Jan	0.0528	-0.0154	0.0463	0.0277	0.9989
7-Jan	0.0910	0.0507	0.0278	0.0247	0.9990
8-Jan	0.1846	0.0699	-0.0255	-0.0010	0.9981
9-Jan	0.1778	0.0940	-0.0513	-0.0209	0.9982
10-Jan	0.1413	0.0898	-0.0790	-0.0435	0.9984
11-Jan	0.0911	0.0593	-0.1053	-0.0685	0.9985
12-Jan	0.0627	0.0138	-0.1271	-0.0956	0.9987
13-Jan	0.0586	-0.0326	-0.1412	-0.1246	0.9990
14-Jan	0.0530	-0.0686	-0.1444	-0.1552	0.9992
15-Jan	-0.0805	-0.0509	-0.0564	-0.1360	0.9972
16-Jan	-0.1653	-0.0536	-0.0487	-0.1584	0.9975
17-Jan	-0.2305	-0.0325	-0.0318	-0.1816	0.9978
18-Jan	-0.2555	0.0025	-0.0071	-0.2055	0.9981
19-Jan	-0.2319	0.0405	0.0238	-0.2299	0.9985
20-Jan	-0.1773	0.0739	0.0591	-0.2544	0.9989
21-Jan	-0.1079	0.0963	0.0975	-0.2787	0.9993
22-Jan	0.1258	0.1179	0.0197	-0.1777	0.9963
23-Jan	0.1717	0.1232	0.0392	-0.1981	0.9967
24-Jan	0.1284	0.1045	0.0603	-0.2183	0.9972
25-Jan	0.0365	0.0650	0.0808	-0.2383	0.9977
26-Jan	-0.0609	0.0085	0.0987	-0.2579	0.9982
27-Jan	-0.1293	-0.0596	0.1124	-0.2770	0.9987
28-Jan	-0.1622	-0.1300	0.1200	-0.2955	0.9993
29-Jan	-0.2127	-0.0750	0.0354	-0.2999	0.9955
30-Jan	-0.1640	-0.1125	0.0592	-0.3307	0.9961
31-Jan	-0.0630	-0.1276	0.0716	-0.3610	0.9967

4.4 Weekly Ratios

The weekly ratios of different IMFs and the residue are calculated using equation (2.18) for the period of last 12 years, that is, from year 2001 to the year 2012. The expected weekly ratios of different IMFs and the residue are calculated using equation (2.19). The expected weekly ratios are presented in Table 4.3.

Table 4.3: Expected weekly ratios of IMFs and the residue

Week No.	IMF3	IMF4	IMF5	IMF6	Residue
1	0.5607	0.6427	0.8120	0.8524	0.9890
2	0.6290	0.6226	0.7886	0.8686	0.9900
3	0.6834	0.7361	0.7448	0.8559	0.9922
4	0.7738	0.8120	0.7525	0.8123	0.9956
5	0.6375	0.7378	0.7239	0.7970	0.9789
6	0.6713	0.6551	0.6841	0.7941	0.9837
7	0.7724	0.7883	0.8090	0.7748	0.9892
8	0.8465	0.9241	0.7678	0.8173	0.9953
9	0.7528	0.6852	0.6833	0.7626	0.9746
10	0.7416	0.7319	0.7979	0.5922	0.9810
11	0.7028	0.8167	0.7696	0.5634	0.9874
12	0.7166	0.7349	0.7766	0.7128	0.9938
13	0.8042	0.7285	0.8177	0.8473	1.0000
14	0.7896	0.7205	0.7798	0.8160	0.9845
15	0.8402	0.7280	0.8252	0.8633	0.9899
16	0.7926	0.6370	0.9023	0.7789	0.9949
17	0.8059	0.7209	0.8338	0.7837	0.9993
18	0.7260	0.6612	0.7835	0.8331	0.9881
19	0.7646	0.7717	0.8457	0.7273	0.9915
20	0.7334	0.8010	0.7891	0.7090	0.9945
21	0.7242	0.8147	0.6904	0.8221	0.9971
22	0.7418	0.9365	0.6795	0.8456	0.9995
23	0.7025	0.7913	0.8153	0.8021	0.9928
24	0.6877	0.8099	0.8364	0.7485	0.9950
25	0.7409	0.8553	0.7792	0.7288	0.9971
26	0.7400	0.7940	0.7289	0.7871	0.9993
27	0.7572	0.8679	0.6419	0.8435	1.0015
28	0.7476	0.7464	0.7579	0.7236	0.9950
29	0.7543	0.6660	0.7292	0.7043	0.9966
30	0.7831	0.7285	0.8207	0.6897	0.9979
31	0.7146	0.6614	0.9183	0.6877	0.9988
32	0.7886	0.6723	0.8092	0.6889	0.9965
33	0.7062	0.6469	0.8555	0.7030	0.9962
34	0.6923	0.7484	0.7692	0.7933	0.9954

Week No.	IMF3	IMF4	IMF5	IMF6	Residue
35	0.7352	0.8678	0.8243	0.8990	0.9938
36	0.8190	0.9744	0.7710	1.0189	0.9914
37	0.6919	0.7419	0.7551	0.7988	0.9958
38	0.7870	0.8188	0.8279	0.7790	0.9919
39	0.8228	0.8997	0.7948	0.7996	0.9872
40	0.8930	0.8276	0.8468	0.7712	0.9819
41	0.6894	0.9083	0.7383	0.7575	0.9938
42	0.6100	0.7900	0.8028	0.7189	0.9871
43	0.6262	0.7947	0.8147	0.7826	0.9799
44	0.6307	0.8488	0.7879	0.8752	0.9724
45	0.7031	0.7553	0.8522	0.8126	0.9954
46	0.7087	0.8389	0.8312	0.7347	0.9875
47	0.6913	0.8208	0.7930	0.7323	0.9799
48	0.7393	0.8812	0.6801	0.7228	0.9729
49	0.6125	0.8240	0.6783	0.7013	0.9982
50	0.6410	0.7984	0.7596	0.7994	0.9929
51	0.6857	0.7920	0.7655	0.9248	0.9889
52	0.7829	0.8476	0.8064	0.9769	0.9870

4.5 Monthly Ratios

The monthly ratios of different IMFs and the residue are calculated using equation (2.20) for the period of last 12 years, that is, from year 2001 to the year 2012. The expected monthly ratios of different IMFs and the residue are calculated using equation (2.21). The expected weekly ratios are presented in Table 4.4.

Table 4.4: Expected monthly ratios of IMFs and the residue

Month	IMF3	IMF4	IMF5	IMF6	Residue
Jan	0.3088	0.3945	0.4228	0.6258	0.8975
Feb	0.4463	0.4627	0.4091	0.5940	0.9156
Mar	0.5235	0.5732	0.5734	0.5355	0.9409
Apr	0.5179	0.4838	0.6454	0.6261	0.9614
May	0.5605	0.4424	0.6491	0.5536	0.9762
Jun	0.5309	0.4932	0.5726	0.5991	0.9850
Jul	0.5061	0.5027	0.4853	0.5794	0.9933
Aug	0.4787	0.5321	0.4850	0.5337	0.9958
Sep	0.6403	0.6537	0.4948	0.6313	0.9883
Oct	0.6364	0.7002	0.6259	0.6386	0.9705
Nov	0.5423	0.7425	0.6186	0.6720	0.9409
Dec	0.6052	0.7646	0.5899	0.7337	0.9119

4.6 Ratio Factors

A ratio factor for each day of the year is calculated using equation (2.22). The ratio factors for month of January shown in the Table 4.5. The complete result is enclosed in Appendix (Table A2).

Table 4.5: Ratio factors IMFs and the residue for the month of January

Date	IMF3	IMF4	IMF5	IMF6	Residue
1-Jan	0.0066	-0.0490	-0.0776	-0.0048	0.8865
2-Jan	-0.0097	-0.0599	-0.0479	0.0029	0.8865
3-Jan	-0.0191	-0.0569	-0.0208	0.0088	0.8865
4-Jan	-0.0179	-0.0432	-0.0001	0.0127	0.8865
5-Jan	-0.0055	-0.0238	0.0125	0.0146	0.8866
6-Jan	0.0091	-0.0039	0.0159	0.0148	0.8866
7-Jan	0.0158	0.0129	0.0095	0.0132	0.8867
8-Jan	0.0358	0.0172	-0.0085	-0.0005	0.8868
9-Jan	0.0345	0.0231	-0.0171	-0.0113	0.8869
10-Jan	0.0275	0.0221	-0.0263	-0.0236	0.8870
11-Jan	0.0177	0.0146	-0.0351	-0.0372	0.8872
12-Jan	0.0122	0.0034	-0.0424	-0.0520	0.8874
13-Jan	0.0114	-0.0080	-0.0471	-0.0677	0.8876
14-Jan	0.0103	-0.0168	-0.0481	-0.0843	0.8878
15-Jan	-0.0170	-0.0148	-0.0178	-0.0729	0.8880
16-Jan	-0.0349	-0.0156	-0.0153	-0.0848	0.8882
17-Jan	-0.0486	-0.0094	-0.0100	-0.0973	0.8885
18-Jan	-0.0539	0.0007	-0.0022	-0.1101	0.8888
19-Jan	-0.0490	0.0118	0.0075	-0.1231	0.8891
20-Jan	-0.0374	0.0214	0.0186	-0.1362	0.8895
21-Jan	-0.0228	0.0280	0.0307	-0.1493	0.8898
22-Jan	0.0301	0.0378	0.0063	-0.0903	0.8902
23-Jan	0.0410	0.0395	0.0125	-0.1007	0.8906
24-Jan	0.0307	0.0335	0.0192	-0.1110	0.8910
25-Jan	0.0087	0.0208	0.0257	-0.1211	0.8914
26-Jan	-0.0146	0.0027	0.0314	-0.1311	0.8919
27-Jan	-0.0309	-0.0191	0.0358	-0.1408	0.8923
28-Jan	-0.0388	-0.0416	0.0382	-0.1502	0.8928
29-Jan	-0.0419	-0.0218	0.0108	-0.1496	0.8747
30-Jan	-0.0323	-0.0327	0.0181	-0.1649	0.8752
31-Jan	-0.0124	-0.0371	0.0219	-0.1801	0.8757

4.7 Forecasting of Annual Peak Values of IMFs and the Residue

The annual peak values of different IMFs and the residue are forecasted using least square regression. For example, let the annual peak values of the residue of the historical load data of last 12 years are considered. Table 4.6 contains the data.

Table 4.6: Historical annual peak values of the residue of load data

Year	Annual peak value (MW)
2001	2888.00
2002	2980.00
2003	3466.00
2004	3598.00
2005	3674.00
2006	3985.00
2007	4314.20
2008	4450.00
2009	4670.90
2010	5235.20
2011	5433.00
2012	6080.00

The above data are fitted to a 2nd order polynomial curve shown in Figure 4.9. It is observed that 2nd order polynomial regression gives good result.

The equation of the curve is given by,

$$FYPL_{res} = 11.39t^2 + 123.17t + 2813.30 \quad (4.2)$$

Where,

$FYPL_{res}$ = Forecasted annual peak value of the residue

t = Time (Year)

The goodness of fitting above equation is 98.65%. So, it is expected that the fitted equation gives good forecasted results.

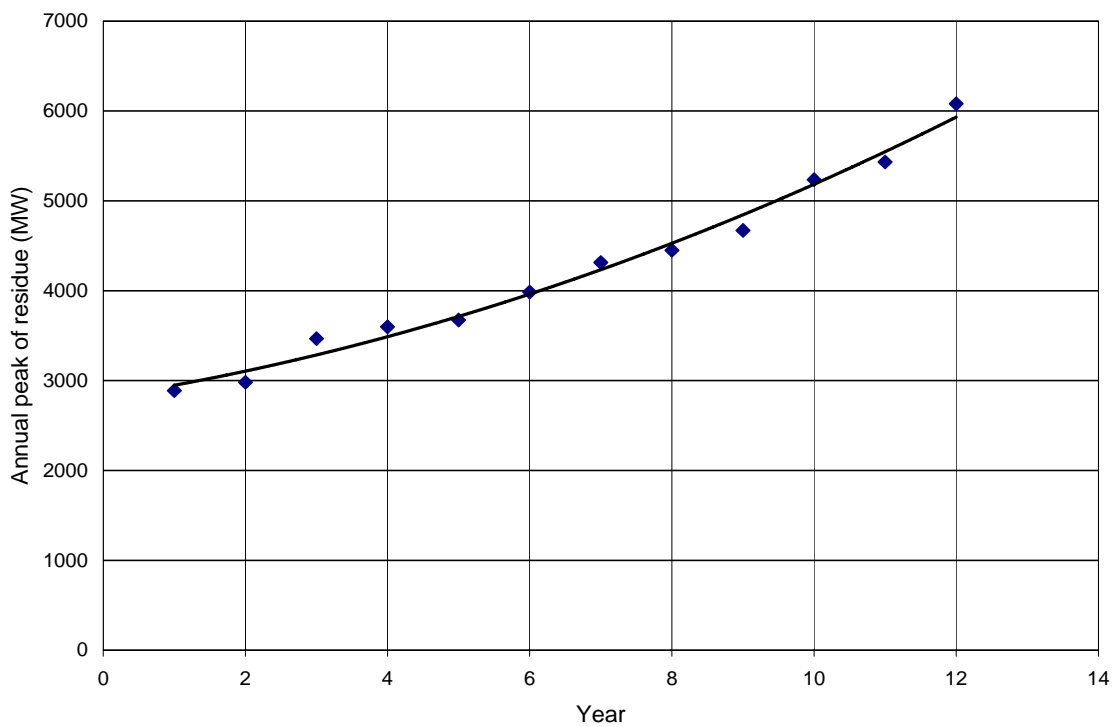


Figure 4.9: Fitted curve to the historical annual peak values of the residue

Similarly IMF3, IMF4, IMF5 and IMF6 are forecasted using the following equations.

The fitted curves are shown in Figure 4.10 to 4.13.

$$FYPL_{IMF3} = 0.24t^2 + 19.99t + 85.12 \quad (4.3)$$

$$FYPL_{IMF4} = 1.07t^2 + 10.22t + 78.97 \quad (4.4)$$

$$FYPL_{IMF5} = 0.60t^2 + 32.11t + 59.47 \quad (4.5)$$

$$FYPL_{IMF6} = 0.35t^2 + 31.23t + 63.32 \quad (4.6)$$

Where,

$FYPL_{IMF3}$ = Forecasted annual peak value of IMF3

$FYPL_{IMF4}$ = Forecasted annual peak value of IMF4

$FYPL_{IMF5}$ = Forecasted annual peak value of IMF5

$FYPL_{IMF6}$ = Forecasted annual peak value IMF6

t = Time (Year)

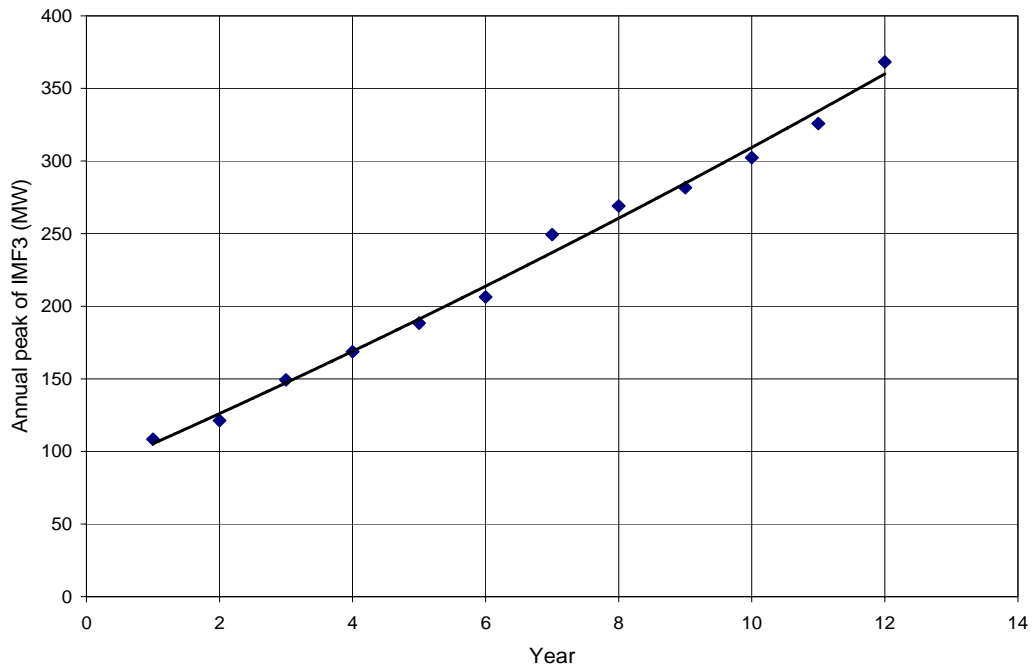


Figure 4.10: Fitted curve to the historical annual peak values of IMF3

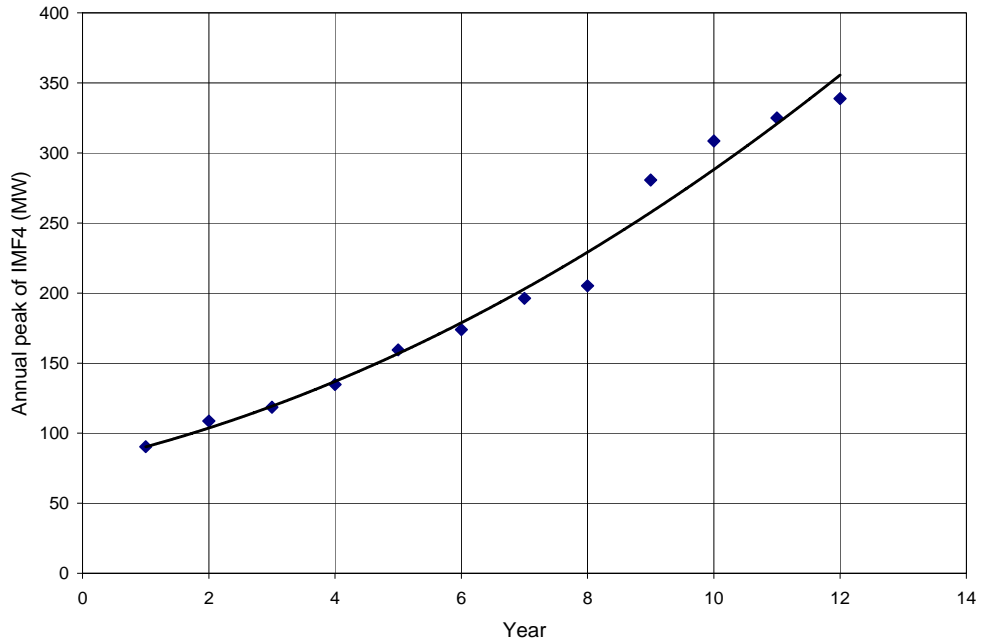


Figure 4.11: Fitted curve to the historical annual peak values of IMF4

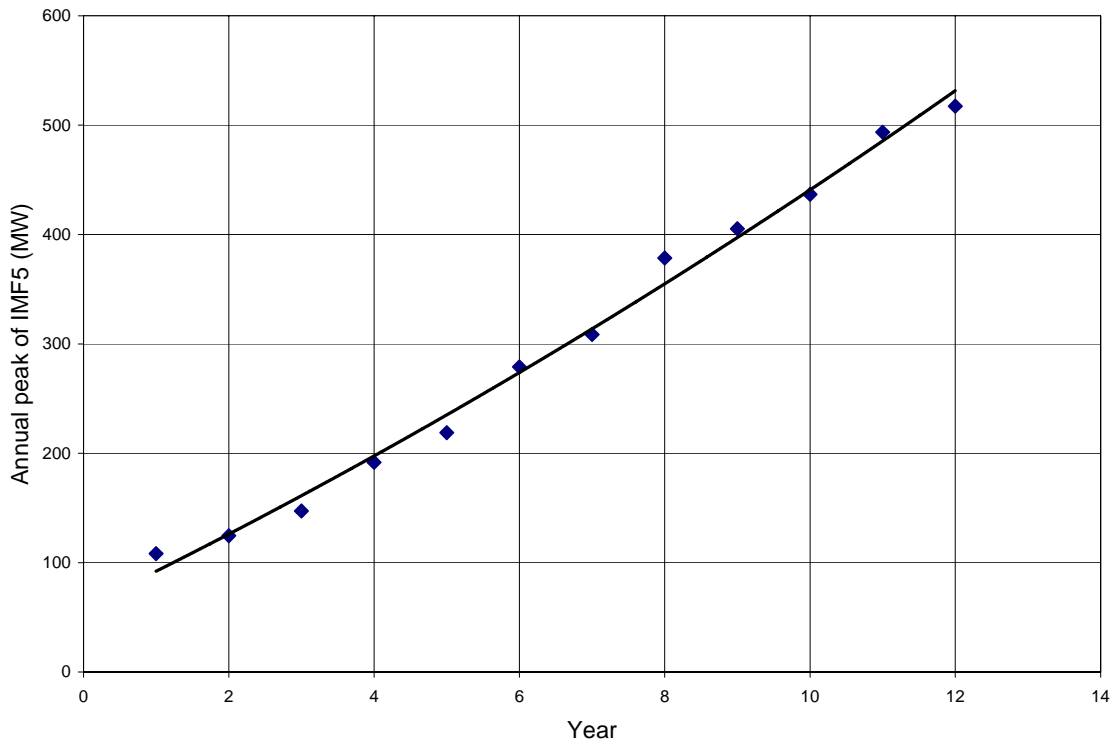


Figure 4.12: Fitted curve to the historical annual peak values of IMF5

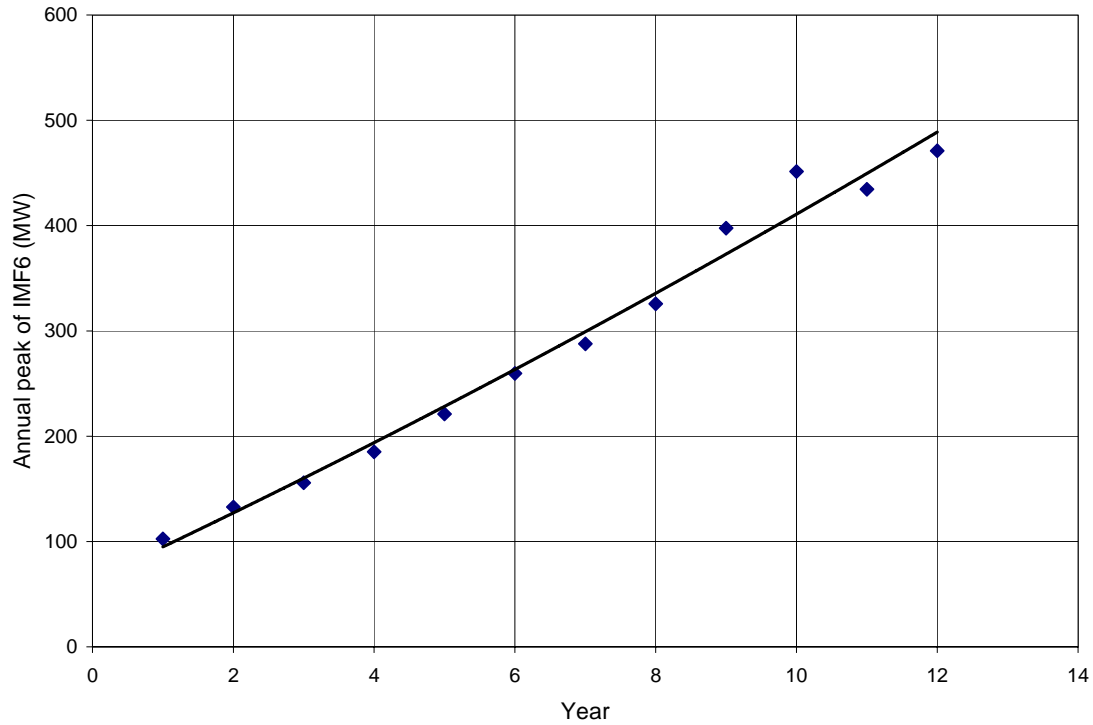


Figure 4.13: Fitted curve to the historical annual peak values of IMF6

4.8 Forecasting of Daily Peak Values of IMFs and the Residue

The daily peak values of different IMFs and the residue are evaluated using equation (2.23). For example, the forecasted daily peak values of different IMFs and the residue of January, 2014 is listed in Table 4.7.

Table 4.7: Daily peak values of different IMFs and the residue for January, 2014

Date	IMF 3 (MW)	IMF 4 (MW)	IMF 5 (MW)	IMF 6 (MW)	Residue (MW)
1-Jan-14	2.73	-21.14	-48.68	-2.75	6002.78
2-Jan-14	-4.01	-25.84	-30.01	1.67	6002.65
3-Jan-14	-7.90	-24.58	-13.05	5.00	6002.65
4-Jan-14	-7.39	-18.64	-0.06	7.21	6002.85
5-Jan-14	-2.25	-10.27	7.86	8.34	6003.12
6-Jan-14	3.77	-1.69	9.97	8.42	6003.53
7-Jan-14	6.50	5.55	5.98	7.51	6004.07
8-Jan-14	14.79	7.41	-5.33	-0.30	6004.41
9-Jan-14	14.25	9.97	-10.73	-6.46	6005.22
10-Jan-14	11.33	9.52	-16.51	-13.46	6006.17

Date	IMF 3 (MW)	IMF 4 (MW)	IMF 5 (MW)	IMF 6 (MW)	Residue (MW)
11-Jan-14	7.30	6.29	-22.02	-21.20	6007.18
12-Jan-14	5.03	1.46	-26.58	-29.60	6008.40
13-Jan-14	4.70	-3.46	-29.52	-38.57	6009.76
14-Jan-14	4.24	-7.27	-30.19	-48.04	6011.18
15-Jan-14	-7.01	-6.39	-11.15	-41.50	6012.53
16-Jan-14	-14.39	-6.72	-9.61	-48.31	6014.29
17-Jan-14	-20.07	-4.07	-6.28	-55.41	6016.12
18-Jan-14	-22.25	0.32	-1.41	-62.71	6018.15
19-Jan-14	-20.20	5.08	4.69	-70.14	6020.32
20-Jan-14	-15.44	9.26	11.68	-77.60	6022.55
21-Jan-14	-9.40	12.07	19.26	-85.04	6024.99
22-Jan-14	12.40	16.30	3.92	-51.45	6027.50
23-Jan-14	16.93	17.04	7.83	-57.35	6030.14
24-Jan-14	12.66	14.45	12.04	-63.21	6032.91
25-Jan-14	3.60	8.99	16.12	-68.99	6035.83
26-Jan-14	-6.01	1.18	19.70	-74.66	6038.87
27-Jan-14	-12.75	-8.24	22.43	-80.19	6042.06
28-Jan-14	-15.99	-17.98	23.95	-85.55	6045.37
29-Jan-14	-17.28	-9.43	6.79	-85.20	5922.34
30-Jan-14	-13.32	-14.14	11.36	-93.94	5925.80
31-Jan-14	-5.12	-16.03	13.74	-102.57	5929.32

4.9 Forecasting of Daily Peak Load

The daily peak load is forecasted by summing up the forecasted results of IMF3, IMF4, IMF5, IMF6 and the residue.

A sample result is shown in Table 4.8 that contains the daily forecasted peak load of year 2014. The complete results are enclosed in Appendix (Table B1 to B10)

Table 4.8: Forecasted daily peak load of year 2014

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
1-Jan-14	5932.94	1-Apr-14	6635.69	1-Jul-14	6755.22	1-Oct-14	6466.14
2-Jan-14	5944.45	2-Apr-14	6484.18	2-Jul-14	6714.45	2-Oct-14	6403.46
3-Jan-14	5962.12	3-Apr-14	6524.29	3-Jul-14	6687.36	3-Oct-14	6336.27
4-Jan-14	5983.97	4-Apr-14	6549.92	4-Jul-14	6672.40	4-Oct-14	6274.60
5-Jan-14	6006.80	5-Apr-14	6563.71	5-Jul-14	6667.88	5-Oct-14	6228.93
6-Jan-14	6024.00	6-Apr-14	6574.13	6-Jul-14	6671.20	6-Oct-14	6202.25
7-Jan-14	6029.60	7-Apr-14	6581.71	7-Jul-14	6678.90	7-Oct-14	6194.47
8-Jan-14	6020.98	8-Apr-14	6588.04	8-Jul-14	6686.99	8-Oct-14	6360.30

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
9-Jan-14	6012.25	9-Apr-14	6624.66	9-Jul-14	6642.32	9-Oct-14	6379.45
10-Jan-14	5997.05	10-Apr-14	6623.16	10-Jul-14	6669.20	10-Oct-14	6404.80
11-Jan-14	5977.55	11-Apr-14	6628.94	11-Jul-14	6695.96	11-Oct-14	6434.73
12-Jan-14	5958.72	12-Apr-14	6646.31	12-Jul-14	6721.69	12-Oct-14	6467.97
13-Jan-14	5942.90	13-Apr-14	6661.70	13-Jul-14	6744.80	13-Oct-14	6499.10
14-Jan-14	5929.92	14-Apr-14	6663.68	14-Jul-14	6762.17	14-Oct-14	6526.15
15-Jan-14	5946.49	15-Apr-14	6650.89	15-Jul-14	6772.83	15-Oct-14	6466.81
16-Jan-14	5935.26	16-Apr-14	6680.71	16-Jul-14	6788.42	16-Oct-14	6485.28
17-Jan-14	5930.29	17-Apr-14	6648.46	17-Jul-14	6774.82	17-Oct-14	6504.55
18-Jan-14	5932.11	18-Apr-14	6632.50	18-Jul-14	6756.60	18-Oct-14	6523.04
19-Jan-14	5939.76	19-Apr-14	6630.26	19-Jul-14	6732.41	19-Oct-14	6538.60
20-Jan-14	5950.45	20-Apr-14	6633.88	20-Jul-14	6705.36	20-Oct-14	6545.48
21-Jan-14	5961.89	21-Apr-14	6633.99	21-Jul-14	6679.53	21-Oct-14	6538.61
22-Jan-14	6008.67	22-Apr-14	6621.11	22-Jul-14	6659.09	22-Oct-14	6530.20
23-Jan-14	6014.59	23-Apr-14	6671.85	23-Jul-14	6638.64	23-Oct-14	6503.73
24-Jan-14	6008.84	24-Apr-14	6613.92	24-Jul-14	6640.62	24-Oct-14	6475.55
25-Jan-14	5995.54	25-Apr-14	6541.56	25-Jul-14	6649.20	25-Oct-14	6449.35
26-Jan-14	5979.08	26-Apr-14	6473.11	26-Jul-14	6660.46	26-Oct-14	6427.88
27-Jan-14	5963.30	27-Apr-14	6417.94	27-Jul-14	6670.28	27-Oct-14	6411.33
28-Jan-14	5949.80	28-Apr-14	6377.19	28-Jul-14	6675.45	28-Oct-14	6401.02
29-Jan-14	5817.23	29-Apr-14	6345.05	29-Jul-14	6673.80	29-Oct-14	6402.93
30-Jan-14	5815.76	30-Apr-14	6303.36	30-Jul-14	6655.38	30-Oct-14	6421.47
31-Jan-14	5819.34	1-May-14	6386.95	31-Jul-14	6650.48	31-Oct-14	6454.38
1-Feb-14	5950.12	2-May-14	6372.43	1-Aug-14	6663.04	1-Nov-14	6298.94
2-Feb-14	5960.49	3-May-14	6356.09	2-Aug-14	6656.36	2-Nov-14	6338.29
3-Feb-14	5968.83	4-May-14	6340.09	3-Aug-14	6651.24	3-Nov-14	6364.80
4-Feb-14	5972.88	5-May-14	6324.96	4-Aug-14	6647.70	4-Nov-14	6376.78
5-Feb-14	5985.03	6-May-14	6310.99	5-Aug-14	6644.61	5-Nov-14	6544.23
6-Feb-14	5979.72	7-May-14	6283.72	6-Aug-14	6625.97	6-Nov-14	6515.30
7-Feb-14	5966.33	8-May-14	6276.42	7-Aug-14	6629.64	7-Nov-14	6481.64
8-Feb-14	5949.71	9-May-14	6273.89	8-Aug-14	6632.98	8-Nov-14	6447.76
9-Feb-14	5935.67	10-May-14	6281.92	9-Aug-14	6634.55	9-Nov-14	6416.47
10-Feb-14	5924.05	11-May-14	6304.22	10-Aug-14	6634.76	10-Nov-14	6388.69
11-Feb-14	5915.51	12-May-14	6338.61	11-Aug-14	6636.53	11-Nov-14	6362.39
12-Feb-14	5926.30	13-May-14	6377.66	12-Aug-14	6643.20	12-Nov-14	6351.87
13-Feb-14	5935.34	14-May-14	6380.27	13-Aug-14	6637.15	13-Nov-14	6342.25
14-Feb-14	5939.61	15-May-14	6421.49	14-Aug-14	6648.57	14-Nov-14	6330.37
15-Feb-14	5936.50	16-May-14	6459.79	15-Aug-14	6666.95	15-Nov-14	6316.91
16-Feb-14	5927.76	17-May-14	6488.59	16-Aug-14	6688.78	16-Nov-14	6304.19
17-Feb-14	5915.07	18-May-14	6504.72	17-Aug-14	6711.07	17-Nov-14	6293.66
18-Feb-14	5898.56	19-May-14	6512.18	18-Aug-14	6731.43	18-Nov-14	6284.67
19-Feb-14	5830.47	20-May-14	6522.51	19-Aug-14	6747.28	19-Nov-14	6326.73
20-Feb-14	5824.79	21-May-14	6489.40	20-Aug-14	6747.01	20-Nov-14	6302.40
21-Feb-14	5829.28	22-May-14	6515.51	21-Aug-14	6752.12	21-Nov-14	6270.66

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
22-Feb-14	5851.52	23-May-14	6542.42	22-Aug-14	6748.59	22-Nov-14	6233.84
23-Feb-14	5895.04	24-May-14	6571.95	23-Aug-14	6741.99	23-Nov-14	6195.99
24-Feb-14	5958.01	25-May-14	6599.63	24-Aug-14	6735.56	24-Nov-14	6161.61
25-Feb-14	6037.00	26-May-14	6619.59	25-Aug-14	6731.58	25-Nov-14	6133.97
26-Feb-14	5887.44	27-May-14	6631.12	26-Aug-14	6731.44	26-Nov-14	6151.54
27-Feb-14	5949.56	28-May-14	6623.94	27-Aug-14	6727.01	27-Nov-14	6127.69
28-Feb-14	6007.99	29-May-14	6640.39	28-Aug-14	6729.43	28-Nov-14	6104.73
1-Mar-14	6269.42	30-May-14	6654.56	29-Aug-14	6736.01	29-Nov-14	6084.42
2-Mar-14	6331.69	31-May-14	6661.02	30-Aug-14	6751.03	30-Nov-14	6068.90
3-Mar-14	6381.84	1-Jun-14	6709.90	31-Aug-14	6772.98	1-Dec-14	5865.31
4-Mar-14	6409.11	2-Jun-14	6701.00	1-Sep-14	6760.73	2-Dec-14	5877.20
5-Mar-14	6395.30	3-Jun-14	6687.62	2-Sep-14	6794.60	3-Dec-14	6130.93
6-Mar-14	6400.67	4-Jun-14	6578.90	3-Sep-14	6789.36	4-Dec-14	6159.92
7-Mar-14	6399.36	5-Jun-14	6568.89	4-Sep-14	6802.67	5-Dec-14	6171.81
8-Mar-14	6402.27	6-Jun-14	6574.59	5-Sep-14	6807.84	6-Dec-14	6163.96
9-Mar-14	6410.13	7-Jun-14	6600.29	6-Sep-14	6807.49	7-Dec-14	6137.00
10-Mar-14	6417.03	8-Jun-14	6646.36	7-Sep-14	6803.31	8-Dec-14	6097.85
11-Mar-14	6413.10	9-Jun-14	6710.25	8-Sep-14	6791.52	9-Dec-14	6057.99
12-Mar-14	6357.44	10-Jun-14	6785.78	9-Sep-14	6766.93	10-Dec-14	6093.01
13-Mar-14	6336.83	11-Jun-14	6802.38	10-Sep-14	6748.33	11-Dec-14	6050.96
14-Mar-14	6327.13	12-Jun-14	6831.63	11-Sep-14	6707.49	12-Dec-14	6010.84
15-Mar-14	6331.11	13-Jun-14	6836.70	12-Sep-14	6661.42	13-Dec-14	5972.02
16-Mar-14	6338.72	14-Jun-14	6817.19	13-Sep-14	6619.83	14-Dec-14	5936.82
17-Mar-14	6338.35	15-Jun-14	6780.49	14-Sep-14	6590.88	15-Dec-14	5908.88
18-Mar-14	6332.48	16-Jun-14	6734.95	15-Sep-14	6577.45	16-Dec-14	5895.13
19-Mar-14	6339.66	17-Jun-14	6687.42	16-Sep-14	6580.04	17-Dec-14	5885.93
20-Mar-14	6342.26	18-Jun-14	6626.68	17-Sep-14	6623.44	18-Dec-14	5883.40
21-Mar-14	6342.27	19-Jun-14	6604.85	18-Sep-14	6646.70	19-Dec-14	5897.42
22-Mar-14	6340.74	20-Jun-14	6598.16	19-Sep-14	6658.24	20-Dec-14	5920.49
23-Mar-14	6339.20	21-Jun-14	6605.21	20-Sep-14	6658.07	21-Dec-14	5942.96
24-Mar-14	6340.48	22-Jun-14	6623.07	21-Sep-14	6652.15	22-Dec-14	5959.33
25-Mar-14	6344.13	23-Jun-14	6646.99	22-Sep-14	6647.22	23-Dec-14	5965.87
26-Mar-14	6359.10	24-Jun-14	6671.48	23-Sep-14	6649.63	24-Dec-14	6011.90
27-Mar-14	6359.11	25-Jun-14	6726.15	24-Sep-14	6724.82	25-Dec-14	6014.65
28-Mar-14	6365.52	26-Jun-14	6744.60	25-Sep-14	6721.29	26-Dec-14	6025.99
29-Mar-14	6377.72	27-Jun-14	6766.21	26-Sep-14	6719.26	27-Dec-14	6049.21
30-Mar-14	6402.21	28-Jun-14	6778.31	27-Sep-14	6717.74	28-Dec-14	6076.79
31-Mar-14	6438.78	29-Jun-14	6771.60	28-Sep-14	6711.66	29-Dec-14	6099.21
		30-Jun-14	6746.01	29-Sep-14	6695.97	30-Dec-14	6103.05
				30-Sep-14	6668.11	31-Dec-14	6082.08

4.10 Forecasting of Annual Peak Load

The forecasted annual peak load of a particular year is evaluated by taking the maximum value among the forecasted daily peak loads of that year. It can be expressed as,

$$FYPL_q = \max (FDPL_{Jan1q}, FDPL_{Jan2q}, \dots \dots FDPL_{Dec31q}) \quad (4.7)$$

Where,

$FYPL_q$ = Forecasted annual peak load of q-th year

$FDPL_{Jan1q}$ = Forecasted annual peak load of January 1 of q-th year

$FDPL_{Jan2q}$ = Forecasted annual peak load of January 2 of q-th year

.....

$FDPL_{Dec31q}$ = Forecasted annual peak load of December 31 of q-th year

The forecasted annual peak load of BPS for the period of next 10 years, that is, from year 2013 to 2022 using equation (4.7) is presented in Table 4.9.

Table 4.9: Forecasted annual peak load of BPS

Year	Forecasted annual peak (MW)
2013	6400.00
2014	6836.00
2015	7297.00
2016	7780.00
2017	8286.00
2018	8815.00
2019	9366.00
2020	9941.00
2021	10539.00
2022	11159.00

4.10.1 Forecasting of Annual Peak Load Including Diversity Factor

The annual peak load can be forecasted using the concept of diversity factor and the forecasted annual peak values of IMFs and the residue. As the times of occurrence of a peak load and its components (i.e. IMFs and residue) in a year are not the same, a diversity factor is introduced.

For any IMF, diversity factor is the ratio between the annual peak value of that IMF and the value of that IMF at the time of system peak.

For i-th IMF, diversity factor of m-th year is calculated as,

$$DF_{im} = \frac{YPL_{IMF\ i\ m}}{PL_{IMF\ i\ m}} \quad (4.8)$$

Where,

DF_{im} = Diversity factor of i-th IMF of m-th year

$YPL_{IMF\ i\ m}$ = Annual Peak value of i-th IMF of m-th year

$PL_{IMF\ i\ m}$ = Value of i-th IMF at the time of system peak load of m-th year

Now the expected or mean diversity factor of i-th IMF is calculated as,

$$E(DF_i) = \frac{1}{N} \sum_{m=1}^{m=N} DF_{im} \quad (4.9)$$

Where,

$E(DF_i)$ = Expected diversity factor of i-th IMF

DF_{im} = Diversity factor of i-th IMF of m-th year

N = No. of years considered for historical data

The diversity factors and its expected value of the residue of the load signal are also calculated using the above process.

The diversity factors of different IMFs and the residue are calculated using equation (4.8) for the period of last 12 years, that is, from year 2001 to the year 2012. The expected diversity factors of different IMFs and the residue are calculated using equation (4.9). The expected diversity factors are presented in Table 4.10.

Table 4.10: Expected diversity factor

Component	Expected diversity factor
IMF3	4.92
IMF4	4.24
IMF5	3.80
IMF6	1.53
Residue	1.10

It is observed from the above table that the expected diversity factor of IMF3 is the highest and that of the residue is the lowest. It indicates that IMF3 has the least impact and the residue has the utmost impact on the forecasted annual peak load.

The annual peak load can be forecasted using,

$$FYPL_q = \sum_{i=3}^6 \frac{FYPL_{IMF i q}}{E(DF_i)} + \frac{FYPL_{res q}}{E(DF_{res})} \quad (4.10)$$

Where,

$FYPL_q$ = Forecasted annual peak load of q-th year

$FYPL_{IMF i q}$ = Forecasted annual peak value of i-th IMF of q-th year

$FYPL_{res q}$ = Forecasted annual peak value of the residue of q-th year

$E(DF_i)$ = Expected diversity factor of i-th IMF

$E(DF_{res})$ = Expected diversity factor of the residue

Using equation (4.10), the annual peak loads of BPS for the period of next 10 years are calculated. The values are listed in Table 4.11.

It is observed from Table 4.9 and 4.11 that the forecasted annual peak values of BPS for the period of next 10 years, that is, form year 2013 to 2022 are very close to each other.

Table 4.11: Forecasted annual peak load of BPS using diversity factor

Year	Forecasted annual peak (MW)
2013	6432.00
2014	6878.00
2015	7310.00
2016	7796.00
2017	8303.00
2018	8845.00
2019	9388.00
2020	9965.00
2021	10558.00
2022	11183.00

4.11 Observations

This section contains the additional generation requirement of BPS for the period of next 10 years. The additional generation requirement for every successive year is calculated as,

$$AGR = \frac{FYPL_{q+1} - FYPL_q}{FYPL_q} \times 100\% \quad (4.11)$$

Where,

AGR = Additional generation requirement in %

FYPL_q = Forecasted annual peak load of q-th year

$FYPL_{q+1}$ = Forecasted annual peak load of (q+1)-th year

Using the forecasted results of Table 4.9, the AGRs are calculated. The results are listed in Table 4.12.

Table 4.12: Addition generation requirement

Year	AGR (%)
2014	6.84
2015	6.73
2016	6.62
2017	6.50
2018	6.38
2019	6.26
2020	6.13
2021	6.01
2022	5.89

It is observed from above table that AGR of year 2014 is 6.84%. It means that in year 2014, BPS needs an additional generation of 6.45% than in year 2013. It is also observed that AGR over next 10 years varies in a narrow band which varies from 5.89% to 6.84%. This AGR estimation is entirely based on the forecasted annual peak loads using historical load data of BPS. No other growth factor is included in it.

CHAPTER 5
CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The salient outcomes of this work are presented in the form of concluding remarks in this chapter. The chapter ends with recommendations for future areas of research works in continuation of this work.

5.2 Conclusion

In this work, a new methodology has been proposed to forecast the long-term electrical load using EMD. EMD technique is applied for short-term load forecasting, identification of weather sensitive component of electrical load and multi scale analysis of daily peak load. This work creates a scope to apply EMD to forecast long-term electrical load.

A non-stationary time series signal can be regarded as a linear combination of different signals characterized by different frequencies. EMD technique is used to decompose a non-stationary time series signal into intrinsic oscillatory components called IMFs and a residue. Since electrical load can be viewed as a non-stationary time series signal, it can be decomposed using EMD.

In this work, EMD technique is used on the historical load data of BPS to decompose it into IMFs or different load components and a residue. Daily, weekly and monthly ratios of each IMF and the residue are evaluated. Then the expected values of daily, weekly and monthly ratios of each IMF and the residue are determined. A ratio factor for each day of each IMF and residue is calculated by multiplying expected daily, weekly and monthly ratios. The annual peak value of each IMF and the residue are forecasted using least square 2nd order polynomial regression. These forecasted values are multiplied with

corresponding ratio factor of each day to forecast the daily peak values of each IMF and the residue.

It is observed that IMFs with relatively higher frequency, IMF1 and IMF2, have negligible effect in long-term forecasting and thus they are excluded. Finally, the forecasting of electrical load is obtained by summing up the forecasted values of the influencing components.

The proposed methodology is validated through statistical error evaluation process and comparison with other standard techniques. It is observed that the proposed methodology results in less statistical error than the method presented in [31] and [32].

The developed methodology is applied to forecast the daily peak load of BPS for the period of next 10 years, that is, from year 2013 to year 2022. The annual peak loads of BPS for the same period are also forecasted using two separate techniques. From the forecasted annual peak loads, the additional generation requirement of BPS over next 10 years is also evaluated.

5.3 Recommendation for Future Research

Following are the recommendations for future research in this area.

i) Weather conditions have significant impact on long-term load forecasting. The weather sensitive portion and the weather non-sensitive portion of the load are separated in [36] using EMD. The proposed methodology of this work can be used to forecast the weather sensitive portion and the weather non-sensitive portion of the load. This can help incorporating the impact of weather factors in long-term load forecasting.

- ii) The daily and yearly peak loads of BPS are forecasted in this work. The long-term hourly load of BPS can also be forecasted using the proposed methodology.
- iii) Other techniques such as, ANN, fuzzy logic etc. can be combined with EMD to forecast the long-term electrical load.
- iv) The forecasted load of BPS can be used to evaluate the reliability of the system in generation expansion planning process.
- v) It can also be used to evaluate the future fuel requirement of BPS to generate electricity.

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APPENDICES

Table A1: Expected daily ratios of IMFs and the residue

Date	IMF1	IMF2	IMF3	IMF4	IMF5	IMF6	Residue
1-Jan	0.2368	-0.2784	0.0382	-0.1931	-0.2261	-0.0091	0.9988
2-Jan	0.2709	-0.5486	-0.0562	-0.2361	-0.1394	0.0055	0.9988
3-Jan	0.2793	-0.2570	-0.1105	-0.2245	-0.0606	0.0164	0.9988
4-Jan	-0.2015	0.2107	-0.1034	-0.1703	-0.0003	0.0237	0.9988
5-Jan	0.2323	0.2493	-0.0315	-0.0938	0.0365	0.0274	0.9989
6-Jan	0.0449	0.0069	0.0528	-0.0154	0.0463	0.0277	0.9989
7-Jan	-0.0338	0.0874	0.0910	0.0507	0.0278	0.0247	0.9990
8-Jan	-0.3545	0.3756	0.1846	0.0699	-0.0255	-0.0010	0.9981
9-Jan	0.1814	0.1982	0.1778	0.0940	-0.0513	-0.0209	0.9982
10-Jan	0.1858	-0.1656	0.1413	0.0898	-0.0790	-0.0435	0.9984
11-Jan	-0.1577	-0.4159	0.0911	0.0593	-0.1053	-0.0685	0.9985
12-Jan	0.1415	-0.3619	0.0627	0.0138	-0.1271	-0.0956	0.9987
13-Jan	0.0166	-0.1211	0.0586	-0.0326	-0.1412	-0.1246	0.9990
14-Jan	0.2963	0.0836	0.0530	-0.0686	-0.1444	-0.1552	0.9992
15-Jan	-0.0389	0.2277	-0.0805	-0.0509	-0.0564	-0.1360	0.9972
16-Jan	0.0923	0.2617	-0.1653	-0.0536	-0.0487	-0.1584	0.9975
17-Jan	0.3335	0.1522	-0.2305	-0.0325	-0.0318	-0.1816	0.9978
18-Jan	-0.1082	-0.0490	-0.2555	0.0025	-0.0071	-0.2055	0.9981
19-Jan	-0.1450	0.0236	-0.2319	0.0405	0.0238	-0.2299	0.9985
20-Jan	0.0577	0.2082	-0.1773	0.0739	0.0591	-0.2544	0.9989
21-Jan	0.3039	0.1403	-0.1079	0.0963	0.0975	-0.2787	0.9993
22-Jan	-0.1297	-0.1273	0.1258	0.1179	0.0197	-0.1777	0.9963
23-Jan	-0.1918	-0.1822	0.1717	0.1232	0.0392	-0.1981	0.9967
24-Jan	-0.0433	-0.1210	0.1284	0.1045	0.0603	-0.2183	0.9972
25-Jan	-0.0151	0.0215	0.0365	0.0650	0.0808	-0.2383	0.9977
26-Jan	0.1959	0.1360	-0.0609	0.0085	0.0987	-0.2579	0.9982
27-Jan	0.1523	0.1060	-0.1293	-0.0596	0.1124	-0.2770	0.9987
28-Jan	0.0851	0.0409	-0.1622	-0.1300	0.1200	-0.2955	0.9993
29-Jan	0.2546	0.1334	-0.2127	-0.0750	0.0354	-0.2999	0.9955
30-Jan	-0.1465	0.2229	-0.1640	-0.1125	0.0592	-0.3307	0.9961
31-Jan	0.0967	0.2749	-0.0630	-0.1276	0.0716	-0.3610	0.9967
1-Feb	0.0205	0.1867	0.0482	-0.1115	0.0705	-0.3907	0.9973
2-Feb	0.0386	-0.0102	0.1275	-0.0575	0.0543	-0.4194	0.9980
3-Feb	-0.0952	-0.1364	0.1635	0.0352	0.0216	-0.4469	0.9986
4-Feb	0.2197	-0.0766	0.1448	0.1601	-0.0279	-0.4729	0.9993
5-Feb	-0.1913	-0.1952	0.1851	0.2241	-0.0759	-0.4545	0.9949
6-Feb	-0.0216	-0.0794	0.1461	0.3074	-0.1382	-0.4718	0.9956
7-Feb	0.0282	0.1035	0.0492	0.3857	-0.2057	-0.4872	0.9963
8-Feb	-0.0705	0.0986	-0.0541	0.4446	-0.2762	-0.5005	0.9971
9-Feb	0.2559	0.0336	-0.1076	0.4715	-0.3476	-0.5116	0.9978
10-Feb	-0.0885	-0.0285	-0.1068	0.4585	-0.4177	-0.5202	0.9986
11-Feb	0.1328	-0.0241	-0.0503	0.4048	-0.4839	-0.5262	0.9993
12-Feb	-0.1772	-0.0921	-0.0351	0.3782	-0.4224	-0.5338	0.9945
13-Feb	0.1017	-0.0026	0.0610	0.2726	-0.4368	-0.4950	0.9953
14-Feb	0.2649	0.1100	0.1433	0.1337	-0.4441	-0.4530	0.9961

Date	IMF1	IMF2	IMF3	IMF4	IMF5	IMF6	Residue
15-Feb	0.0695	0.1208	0.1844	-0.0315	-0.4429	-0.4080	0.9969
16-Feb	-0.2174	-0.0521	0.1835	-0.2125	-0.4319	-0.3602	0.9977
17-Feb	-0.0427	-0.1889	0.1389	-0.3981	-0.4100	-0.3099	0.9986
18-Feb	0.2859	-0.0671	0.0382	-0.5767	-0.3768	-0.2574	0.9994
19-Feb	0.2055	0.1882	-0.0939	-0.5659	-0.4312	-0.3628	0.9942
20-Feb	0.3194	0.2060	-0.1858	-0.6518	-0.3618	-0.3426	0.9950
21-Feb	-0.2142	0.1294	-0.2733	-0.7042	-0.2788	-0.3209	0.9959
22-Feb	0.2624	-0.0716	-0.3126	-0.7184	-0.1821	-0.2975	0.9968
23-Feb	-0.0965	-0.1603	-0.2808	-0.6939	-0.0722	-0.2728	0.9977
24-Feb	-0.0978	-0.1362	-0.1853	-0.6322	0.0489	-0.2467	0.9986
25-Feb	0.2941	-0.0111	-0.0399	-0.5366	0.1784	-0.2194	0.9995
26-Feb	0.1899	0.0304	0.1269	-0.5099	0.0945	-0.3226	0.9940
27-Feb	-0.2396	0.0888	0.2447	-0.3683	0.1902	-0.3067	0.9949
28-Feb	-0.1800	0.1337	0.3194	-0.2126	0.2858	-0.2897	0.9958
29-Feb	-0.1784	0.1258	0.3125	-0.2582	0.2974	-0.2784	0.9965
1-Mar	0.3135	0.0734	0.3659	-0.0532	0.3787	-0.2717	0.9968
2-Mar	-0.0853	-0.1237	0.3951	0.0994	0.4660	-0.2529	0.9977
3-Mar	-0.2312	-0.1878	0.3780	0.2352	0.5452	-0.2334	0.9986
4-Mar	0.2635	-0.0419	0.2590	0.3475	0.6144	-0.2134	0.9996
5-Mar	-0.0467	0.0066	0.1774	0.4447	0.4882	-0.3631	0.9939
6-Mar	-0.1252	-0.0395	-0.0032	0.5075	0.4946	-0.2790	0.9949
7-Mar	-0.1835	-0.0340	-0.1686	0.5390	0.4880	-0.1937	0.9958
8-Mar	-0.0111	0.0903	-0.2497	0.5385	0.4688	-0.1077	0.9968
9-Mar	0.0361	0.1672	-0.2470	0.5091	0.4378	-0.0213	0.9978
10-Mar	0.0076	0.0008	-0.2049	0.4572	0.3961	0.0650	0.9987
11-Mar	0.1059	-0.1311	-0.1960	0.3907	0.3445	0.1506	0.9997
12-Mar	-0.1984	-0.1488	-0.3148	0.2296	0.3464	0.0567	0.9941
13-Mar	0.1771	0.0360	-0.3067	0.1497	0.2597	0.1280	0.9950
14-Mar	0.0455	0.1783	-0.2338	0.0866	0.1653	0.1986	0.9960
15-Mar	0.1653	0.1167	-0.0945	0.0494	0.0655	0.2683	0.9969
16-Mar	-0.0004	-0.0938	0.0386	0.0404	-0.0378	0.3368	0.9979
17-Mar	-0.4084	-0.1254	0.0894	0.0566	-0.1419	0.4036	0.9988
18-Mar	-0.0840	-0.0173	0.0835	0.0870	-0.2442	0.4686	0.9998
19-Mar	0.0099	-0.0733	0.0840	0.1321	-0.2127	0.3079	0.9943
20-Mar	-0.1125	0.0024	0.0488	0.1764	-0.2636	0.3458	0.9953
21-Mar	0.2206	0.0376	0.0102	0.2030	-0.3084	0.3815	0.9962
22-Mar	0.3463	0.0219	-0.0289	0.2113	-0.3447	0.4146	0.9971
23-Mar	-0.1934	-0.0203	-0.0611	0.2014	-0.3709	0.4452	0.9981
24-Mar	0.2248	0.0392	-0.0722	0.1743	-0.3853	0.4731	0.9990
25-Mar	0.0360	-0.1225	-0.0735	0.1351	-0.3866	0.4982	0.9999
26-Mar	-0.0964	-0.2172	-0.1419	0.0514	-0.3070	0.4964	0.9946
27-Mar	0.3111	0.0711	-0.1105	-0.0445	-0.2729	0.4809	0.9955
28-Mar	0.2233	0.3412	-0.0871	-0.1057	-0.2306	0.4624	0.9964
29-Mar	0.0836	0.1724	-0.0774	-0.1283	-0.1821	0.4409	0.9973
30-Mar	-0.4343	-0.1120	-0.0392	-0.1147	-0.1277	0.4166	0.9982
31-Mar	0.1218	-0.0396	0.0333	-0.0714	-0.0682	0.3896	0.9991
1-Apr	0.1037	0.1824	0.1155	-0.0100	-0.0048	0.3601	1.0000

Date	IMF1	IMF2	IMF3	IMF4	IMF5	IMF6	Residue
2-Apr	0.0802	0.0743	0.1330	0.0770	-0.1023	0.3646	0.9949
3-Apr	-0.2267	-0.1770	0.1637	0.1937	-0.0484	0.3467	0.9958
4-Apr	0.0989	-0.1219	0.1455	0.2635	0.0097	0.3271	0.9966
5-Apr	0.0448	0.0254	0.0977	0.2851	0.0709	0.3059	0.9975
6-Apr	-0.2173	-0.0276	0.0676	0.2642	0.1339	0.2830	0.9983
7-Apr	0.1635	-0.0311	0.0545	0.2080	0.1971	0.2587	0.9992
8-Apr	-0.3106	0.1080	0.0630	0.1248	0.2591	0.2331	1.0000
9-Apr	0.0375	0.2725	-0.0159	0.2072	0.2520	0.3174	0.9953
10-Apr	-0.2776	0.3276	-0.0166	0.0927	0.3072	0.2927	0.9961
11-Apr	0.1663	0.3155	0.0426	-0.0322	0.3582	0.2666	0.9969
12-Apr	-0.0250	-0.0201	0.1770	-0.1550	0.4041	0.2390	0.9977
13-Apr	0.0403	-0.1044	0.3028	-0.2638	0.4436	0.2103	0.9985
14-Apr	-0.0863	-0.0139	0.3481	-0.3467	0.4753	0.1805	0.9992
15-Apr	-0.0384	-0.0127	0.2997	-0.3936	0.4980	0.1500	1.0000
16-Apr	0.2682	0.0950	0.1656	-0.4186	0.4880	0.2915	0.9957
17-Apr	-0.1825	-0.0984	0.0540	-0.3933	0.4783	0.2270	0.9965
18-Apr	-0.3606	-0.2008	0.0285	-0.3246	0.4585	0.1614	0.9972
19-Apr	0.2276	0.0210	0.0782	-0.2201	0.4289	0.0953	0.9979
20-Apr	0.5793	0.1954	0.1655	-0.0937	0.3904	0.0289	0.9986
21-Apr	-0.3547	0.0803	0.2439	0.0397	0.3435	-0.0371	0.9993
22-Apr	0.3048	-0.0088	0.2673	0.1657	0.2892	-0.1023	1.0000
23-Apr	-0.0164	-0.1379	0.3361	0.1524	0.3429	-0.0201	0.9962
24-Apr	0.1761	-0.2262	0.1248	0.2511	0.2600	-0.0656	0.9968
25-Apr	0.0533	-0.1790	-0.1356	0.3220	0.1714	-0.1100	0.9975
26-Apr	0.1142	0.0515	-0.3414	0.3628	0.0790	-0.1530	0.9981
27-Apr	0.1343	0.2983	-0.4428	0.3723	-0.0148	-0.1945	0.9987
28-Apr	-0.0054	0.2895	-0.4368	0.3510	-0.1080	-0.2341	0.9993
29-Apr	-0.0311	0.0903	-0.3665	0.3047	-0.1988	-0.2716	0.9999
30-Apr	0.4097	0.0956	-0.2570	0.3051	-0.1911	-0.1638	0.9966
1-May	-0.4826	0.2580	-0.1320	0.2203	-0.2706	-0.1717	0.9971
2-May	0.0524	0.2325	-0.0304	0.1371	-0.3437	-0.1770	0.9977
3-May	0.1814	-0.0331	0.0384	0.0588	-0.4088	-0.1799	0.9982
4-May	-0.0053	-0.2963	0.0862	-0.0174	-0.4649	-0.1801	0.9988
5-May	0.3787	-0.3247	0.1164	-0.0933	-0.5108	-0.1776	0.9993
6-May	-0.0790	-0.1579	0.1282	-0.1687	-0.5458	-0.1724	0.9998
7-May	0.0241	0.1140	0.0901	-0.1943	-0.5559	-0.1983	0.9968
8-May	0.0651	0.2533	0.0301	-0.2345	-0.5338	-0.2050	0.9973
9-May	0.0762	0.2825	-0.0355	-0.2588	-0.5034	-0.2093	0.9978
10-May	0.1307	0.3288	-0.0726	-0.2647	-0.4659	-0.2115	0.9983
11-May	-0.4513	0.2392	-0.0582	-0.2516	-0.4227	-0.2118	0.9987
12-May	0.0745	0.0499	0.0005	-0.2216	-0.3752	-0.2105	0.9992
13-May	-0.0928	-0.0925	0.0687	-0.1814	-0.3244	-0.2076	0.9996
14-May	0.2239	-0.3443	0.0895	-0.1167	-0.3542	-0.2576	0.9971
15-May	0.1406	-0.4452	0.1197	-0.0570	-0.2783	-0.2584	0.9975
16-May	0.3679	-0.3696	0.1327	-0.0014	-0.2016	-0.2577	0.9979
17-May	0.0176	-0.0924	0.0973	0.0456	-0.1254	-0.2557	0.9983
18-May	0.0198	0.2996	-0.0032	0.0855	-0.0514	-0.2527	0.9987

Date	IMF1	IMF2	IMF3	IMF4	IMF5	IMF6	Residue
19-May	-0.2305	0.4893	-0.1406	0.1164	0.0191	-0.2493	0.9991
20-May	-0.0738	0.2551	-0.2412	0.1357	0.0845	-0.2456	0.9995
21-May	0.2997	0.0163	-0.1683	0.1655	-0.0584	-0.2496	0.9973
22-May	0.1685	-0.0700	-0.1259	0.1250	0.0044	-0.2298	0.9977
23-May	0.2162	-0.0181	-0.0701	0.0860	0.0613	-0.2100	0.9980
24-May	-0.3307	0.0216	0.0114	0.0497	0.1113	-0.1906	0.9984
25-May	0.1611	-0.0636	0.0929	0.0167	0.1535	-0.1717	0.9988
26-May	0.2159	-0.2303	0.1419	-0.0145	0.1874	-0.1536	0.9992
27-May	-0.1095	-0.2183	0.1593	-0.0505	0.2136	-0.1363	0.9995
28-May	0.0305	-0.0075	0.0854	-0.0814	0.2534	-0.1358	0.9975
29-May	0.0408	0.4477	0.1048	-0.0484	0.2412	-0.1048	0.9978
30-May	-0.0538	0.4386	0.1312	-0.0250	0.2235	-0.0747	0.9982
31-May	-0.1329	0.1864	0.1253	-0.0076	0.2027	-0.0455	0.9985
1-Jun	0.1325	0.0630	0.0645	0.0075	0.1809	-0.0172	0.9989
2-Jun	0.3479	0.1620	-0.0383	0.0218	0.1595	0.0100	0.9992
3-Jun	0.0253	0.2394	-0.1723	0.0389	0.1395	0.0362	0.9996
4-Jun	-0.0455	0.0991	-0.2956	0.0263	0.0497	-0.0011	0.9976
5-Jun	0.0507	-0.2023	-0.4100	0.0002	0.0626	0.0206	0.9980
6-Jun	0.1584	-0.3969	-0.4492	-0.0045	0.0786	0.0411	0.9983
7-Jun	0.2121	-0.3187	-0.3959	0.0206	0.0982	0.0604	0.9986
8-Jun	0.0132	-0.0574	-0.2466	0.0739	0.1218	0.0786	0.9990
9-Jun	0.0440	0.1508	-0.0096	0.1476	0.1494	0.0957	0.9993
10-Jun	0.0082	0.1606	0.2862	0.2326	0.1807	0.1116	0.9996
11-Jun	-0.3308	-0.2206	0.4449	0.3421	0.0589	0.1466	0.9977
12-Jun	0.3183	-0.3699	0.5862	0.3963	0.0588	0.1327	0.9981
13-Jun	-0.1686	-0.1498	0.5929	0.4243	0.0617	0.1178	0.9984
14-Jun	0.3948	0.0867	0.4718	0.4181	0.0666	0.1025	0.9987
15-Jun	-0.1221	0.1008	0.2688	0.3817	0.0730	0.0871	0.9991
16-Jun	-0.0295	0.0353	0.0308	0.3222	0.0806	0.0722	0.9994
17-Jun	-0.2981	0.0522	-0.2062	0.2471	0.0892	0.0580	0.9997
18-Jun	0.0844	0.1177	-0.4171	0.2012	0.0439	0.0363	0.9979
19-Jun	0.3245	0.1644	-0.5160	0.1411	0.0774	0.0111	0.9982
20-Jun	-0.2415	-0.0128	-0.5240	0.0813	0.1112	-0.0136	0.9985
21-Jun	0.1286	-0.0840	-0.4538	0.0274	0.1444	-0.0375	0.9989
22-Jun	-0.2143	0.1441	-0.3261	-0.0173	0.1761	-0.0603	0.9992
23-Jun	0.1603	0.1898	-0.1721	-0.0506	0.2056	-0.0819	0.9995
24-Jun	-0.0071	-0.2543	-0.0264	-0.0716	0.2329	-0.1023	0.9998
25-Jun	0.0650	-0.3447	0.1357	-0.0422	0.3306	-0.0983	0.9979
26-Jun	0.0099	-0.0898	0.2308	-0.0490	0.3353	-0.0951	0.9982
27-Jun	-0.2516	0.1882	0.3427	-0.0511	0.3378	-0.0909	0.9985
28-Jun	0.2981	0.1985	0.3974	-0.0536	0.3385	-0.0857	0.9989
29-Jun	-0.0398	-0.0193	0.3430	-0.0619	0.3377	-0.0795	0.9992
30-Jun	-0.1277	-0.1900	0.1810	-0.0789	0.3357	-0.0721	0.9995
1-Jul	0.1468	-0.1936	-0.0204	-0.1056	0.3328	-0.0637	0.9998
2-Jul	0.2700	0.0864	-0.1630	-0.1215	0.3523	-0.0973	0.9979
3-Jul	-0.0195	0.3770	-0.2695	-0.1652	0.3134	-0.0846	0.9982
4-Jul	-0.2004	0.4736	-0.2959	-0.2136	0.2754	-0.0709	0.9985

Date	IMF1	IMF2	IMF3	IMF4	IMF5	IMF6	Residue
5-Jul	0.3922	0.1869	-0.2608	-0.2604	0.2381	-0.0564	0.9988
6-Jul	0.2403	-0.2362	-0.1872	-0.2998	0.2016	-0.0410	0.9991
7-Jul	-0.2074	-0.3634	-0.1010	-0.3283	0.1659	-0.0251	0.9994
8-Jul	0.3553	-0.1973	-0.0303	-0.3430	0.1309	-0.0086	0.9997
9-Jul	-0.0193	-0.0590	0.0605	-0.4154	0.1711	-0.0746	0.9980
10-Jul	0.1691	-0.0762	0.1598	-0.3710	0.1370	-0.0318	0.9983
11-Jul	0.2324	-0.1097	0.2405	-0.3096	0.1031	0.0112	0.9986
12-Jul	-0.1284	-0.0156	0.2987	-0.2332	0.0696	0.0539	0.9988
13-Jul	-0.2004	0.1770	0.3303	-0.1467	0.0364	0.0962	0.9991
14-Jul	-0.0767	0.3031	0.3226	-0.0559	0.0031	0.1376	0.9993
15-Jul	-0.0013	0.2194	0.2747	0.0340	-0.0303	0.1781	0.9996
16-Jul	0.1860	0.0366	0.2494	-0.0072	0.1094	0.1525	0.9982
17-Jul	0.0802	-0.1268	0.1210	0.0707	0.0782	0.1559	0.9984
18-Jul	0.1309	-0.2034	-0.0235	0.1384	0.0448	0.1586	0.9987
19-Jul	0.2591	-0.1191	-0.1888	0.1939	0.0088	0.1602	0.9989
20-Jul	-0.0204	0.0617	-0.3536	0.2359	-0.0301	0.1607	0.9991
21-Jul	-0.0362	0.1974	-0.4923	0.2655	-0.0726	0.1600	0.9993
22-Jul	0.2258	0.2414	-0.5814	0.2872	-0.1192	0.1579	0.9995
23-Jul	-0.3124	0.1368	-0.6078	0.3048	-0.0636	0.0245	0.9983
24-Jul	-0.0080	0.1585	-0.5676	0.3283	-0.1169	0.0416	0.9985
25-Jul	-0.2439	0.1814	-0.4827	0.3547	-0.1734	0.0571	0.9987
26-Jul	0.1939	0.1410	-0.3762	0.3824	-0.2326	0.0710	0.9988
27-Jul	-0.0233	0.0053	-0.2713	0.4089	-0.2940	0.0835	0.9990
28-Jul	0.0594	-0.1697	-0.1875	0.4318	-0.3566	0.0946	0.9991
29-Jul	0.1773	-0.3215	-0.1372	0.4492	-0.4194	0.1044	0.9992
30-Jul	-0.2841	-0.2687	-0.2047	0.3805	-0.3504	0.0981	0.9985
31-Jul	-0.2307	-0.1394	-0.1565	0.3638	-0.3897	0.1004	0.9986
1-Aug	0.2278	0.0759	-0.1204	0.3466	-0.4280	0.1018	0.9987
2-Aug	-0.0259	0.2493	-0.0847	0.3317	-0.4645	0.1025	0.9988
3-Aug	-0.2530	0.2347	-0.0462	0.3211	-0.4984	0.1027	0.9988
4-Aug	0.0897	0.0711	-0.0054	0.3116	-0.5282	0.1027	0.9989
5-Aug	-0.0884	-0.0721	0.0321	0.2992	-0.5526	0.1027	0.9990
6-Aug	-0.2151	-0.0354	0.0834	0.3404	-0.6113	0.0016	0.9987
7-Aug	0.2109	-0.1932	0.0884	0.3084	-0.5974	0.0217	0.9987
8-Aug	-0.0489	-0.3194	0.0794	0.2717	-0.5743	0.0432	0.9988
9-Aug	0.2050	-0.2044	0.0513	0.2263	-0.5416	0.0664	0.9988
10-Aug	-0.1557	0.1639	0.0102	0.1694	-0.5004	0.0915	0.9988
11-Aug	0.2246	0.4118	-0.0243	0.1018	-0.4518	0.1187	0.9988
12-Aug	0.0549	0.3235	-0.0309	0.0259	-0.3975	0.1483	0.9987
13-Aug	-0.5342	0.0955	-0.1986	-0.0069	-0.3700	0.2416	0.9990
14-Aug	0.4863	-0.0646	-0.1517	-0.0616	-0.3167	0.2392	0.9989
15-Aug	-0.4870	-0.0611	-0.0619	-0.1160	-0.2610	0.2385	0.9989
16-Aug	0.2742	-0.0662	0.0473	-0.1689	-0.2040	0.2394	0.9988
17-Aug	-0.1167	-0.0609	0.1558	-0.2201	-0.1469	0.2418	0.9987
18-Aug	0.1137	0.0798	0.2485	-0.2695	-0.0908	0.2458	0.9986
19-Aug	0.1212	0.2477	0.3105	-0.3178	-0.0368	0.2510	0.9985
20-Aug	-0.1342	0.1921	0.3151	-0.1601	-0.1174	0.2185	0.9992

Date	IMF1	IMF2	IMF3	IMF4	IMF5	IMF6	Residue
21-Aug	-0.1548	0.0564	0.2857	-0.1712	-0.0629	0.2153	0.9991
22-Aug	0.1473	-0.0910	0.2203	-0.2011	-0.0108	0.2133	0.9989
23-Aug	0.1571	-0.2110	0.1469	-0.2384	0.0376	0.2122	0.9987
24-Aug	0.0514	-0.2131	0.0782	-0.2735	0.0818	0.2121	0.9985
25-Aug	0.1798	-0.1078	0.0257	-0.3011	0.1212	0.2127	0.9983
26-Aug	-0.1296	0.0908	-0.0063	-0.3161	0.1555	0.2138	0.9981
27-Aug	0.0297	0.3120	-0.1115	-0.2558	0.1645	0.2042	0.9995
28-Aug	-0.1386	0.3229	-0.1776	-0.2087	0.1734	0.2121	0.9992
29-Aug	-0.0080	0.1573	-0.2255	-0.1455	0.1757	0.2201	0.9989
30-Aug	-0.2557	-0.0180	-0.2219	-0.0688	0.1718	0.2279	0.9987
31-Aug	0.3771	-0.1478	-0.1736	0.0180	0.1623	0.2355	0.9983
1-Sep	0.0978	-0.1554	-0.1011	0.1105	0.1480	0.2426	0.9980
2-Sep	-0.2315	0.0439	-0.0201	0.2040	0.1298	0.2491	0.9977
3-Sep	0.1730	0.1600	-0.0048	0.1682	0.0839	0.2497	0.9997
4-Sep	0.2100	0.0964	0.0374	0.2129	0.0665	0.2458	0.9993
5-Sep	-0.2321	-0.2078	0.0698	0.2389	0.0475	0.2409	0.9990
6-Sep	0.2254	-0.3440	0.1055	0.2438	0.0287	0.2349	0.9985
7-Sep	0.0522	-0.2762	0.1518	0.2272	0.0117	0.2274	0.9981
8-Sep	-0.2246	-0.1049	0.1901	0.1895	-0.0028	0.2185	0.9977
9-Sep	-0.3778	0.0572	0.1946	0.1321	-0.0146	0.2078	0.9972
10-Sep	0.1016	0.0751	0.0672	0.0261	0.0755	0.1740	0.9999
11-Sep	-0.1084	0.0239	-0.0033	-0.0461	0.0406	0.1696	0.9994
12-Sep	0.0066	-0.0016	-0.0985	-0.1195	0.0067	0.1630	0.9988
13-Sep	-0.1454	-0.1298	-0.1718	-0.1881	-0.0264	0.1541	0.9983
14-Sep	-0.0007	-0.2282	-0.1845	-0.2457	-0.0589	0.1429	0.9978
15-Sep	0.0683	-0.0289	-0.1251	-0.2893	-0.0911	0.1292	0.9972
16-Sep	-0.0711	0.2895	0.0080	-0.3162	-0.1235	0.1133	0.9966
17-Sep	-0.1407	0.2743	0.0639	-0.2946	-0.0771	0.2171	1.0000
18-Sep	-0.0860	0.3021	0.1573	-0.2345	-0.0768	0.1956	0.9993
19-Sep	0.0311	0.1257	0.1879	-0.1622	-0.0787	0.1712	0.9987
20-Sep	0.2124	-0.2005	0.1565	-0.0791	-0.0824	0.1442	0.9981
21-Sep	-0.2904	-0.4095	0.0936	0.0117	-0.0870	0.1150	0.9974
22-Sep	-0.0466	-0.2559	0.0352	0.1051	-0.0916	0.0842	0.9967
23-Sep	-0.0043	-0.0616	0.0155	0.1958	-0.0951	0.0522	0.9960
24-Sep	-0.1229	-0.0570	0.1371	0.1967	0.0136	0.1230	1.0000
25-Sep	0.0885	-0.1262	0.1518	0.2519	-0.0140	0.0915	0.9993
26-Sep	-0.1840	-0.0925	0.1868	0.2940	-0.0397	0.0600	0.9985
27-Sep	0.1688	-0.0041	0.2401	0.3205	-0.0633	0.0286	0.9977
28-Sep	-0.1262	0.0109	0.2901	0.3296	-0.0842	-0.0023	0.9970
29-Sep	0.1202	0.0006	0.3104	0.3225	-0.1018	-0.0326	0.9962
30-Sep	-0.0168	-0.0257	0.2874	0.3008	-0.1161	-0.0621	0.9954
1-Oct	-0.0189	-0.1712	0.1027	0.2814	-0.1560	-0.1032	1.0000
2-Oct	-0.0720	-0.2180	-0.0218	0.2042	-0.1646	-0.1243	0.9992
3-Oct	-0.0168	-0.0204	-0.1614	0.1180	-0.1701	-0.1439	0.9983
4-Oct	0.2355	0.0853	-0.2811	0.0294	-0.1723	-0.1619	0.9974
5-Oct	-0.1108	0.1117	-0.3445	-0.0545	-0.1711	-0.1783	0.9966
6-Oct	0.0759	0.0164	-0.3451	-0.1279	-0.1660	-0.1930	0.9957

Date	IMF1	IMF2	IMF3	IMF4	IMF5	IMF6	Residue
7-Oct	-0.1856	-0.0732	-0.2891	-0.1857	-0.1569	-0.2058	0.9948
8-Oct	0.0258	-0.1827	-0.0931	-0.2459	-0.2022	-0.1013	1.0000
9-Oct	-0.3454	-0.2011	-0.0033	-0.2511	-0.1634	-0.1041	0.9991
10-Oct	0.1678	-0.1719	0.0765	-0.2351	-0.1184	-0.1054	0.9981
11-Oct	0.3691	-0.1650	0.1402	-0.1997	-0.0669	-0.1053	0.9972
12-Oct	-0.0041	-0.0586	0.1852	-0.1476	-0.0092	-0.1037	0.9962
13-Oct	0.0741	0.0772	0.1921	-0.0837	0.0527	-0.1010	0.9952
14-Oct	0.1060	0.1443	0.1630	-0.0134	0.1164	-0.0970	0.9942
15-Oct	0.0829	0.0696	0.0891	0.0501	0.0054	-0.1837	1.0000
16-Oct	-0.2823	0.1150	0.0209	0.1414	0.0357	-0.1659	0.9990
17-Oct	0.0994	0.1717	-0.0222	0.2199	0.0641	-0.1464	0.9979
18-Oct	-0.0911	0.1355	-0.0370	0.2788	0.0898	-0.1254	0.9969
19-Oct	-0.0834	0.0329	-0.0262	0.3119	0.1118	-0.1031	0.9959
20-Oct	0.4304	-0.0754	-0.0200	0.3167	0.1291	-0.0797	0.9948
21-Oct	-0.2067	-0.1089	-0.0460	0.2928	0.1405	-0.0555	0.9937
22-Oct	0.1081	-0.1715	-0.0123	0.2854	0.0859	-0.0124	1.0000
23-Oct	0.1168	-0.1323	-0.0643	0.2025	0.0904	0.0143	0.9989
24-Oct	-0.1189	-0.1092	-0.1054	0.1103	0.0913	0.0406	0.9978
25-Oct	0.1637	-0.0637	-0.1253	0.0164	0.0893	0.0665	0.9967
26-Oct	0.1432	0.0168	-0.1202	-0.0713	0.0854	0.0915	0.9956
27-Oct	-0.1724	0.0902	-0.1050	-0.1426	0.0805	0.1154	0.9945
28-Oct	0.3662	0.0766	-0.0887	-0.1868	0.0754	0.1381	0.9934
29-Oct	-0.1570	-0.0393	-0.0525	-0.2494	0.0968	0.1736	1.0000
30-Oct	-0.0149	0.2034	0.0059	-0.2237	0.1252	0.1759	0.9989
31-Oct	-0.0417	0.2868	0.0983	-0.1603	0.1524	0.1767	0.9977
1-Nov	0.2966	0.0866	0.2215	-0.0739	0.1789	0.1756	0.9966
2-Nov	-0.1037	0.0684	0.3213	0.0189	0.2052	0.1727	0.9955
3-Nov	-0.0406	0.1369	0.3542	0.1012	0.2318	0.1679	0.9943
4-Nov	-0.1345	-0.0704	0.3355	0.1585	0.2592	0.1612	0.9932
5-Nov	-0.0323	-0.0363	0.2532	0.1727	0.2457	0.1267	1.0000
6-Nov	0.0478	-0.1183	0.1104	0.1785	0.2564	0.1136	0.9988
7-Nov	-0.0608	-0.1835	-0.0264	0.1650	0.2656	0.0988	0.9977
8-Nov	0.1033	-0.2073	-0.1312	0.1353	0.2721	0.0823	0.9966
9-Nov	0.0388	-0.0724	-0.1929	0.0957	0.2747	0.0643	0.9954
10-Nov	0.0648	0.2167	-0.2164	0.0548	0.2718	0.0449	0.9943
11-Nov	0.1631	0.4294	-0.2248	0.0214	0.2621	0.0240	0.9931
12-Nov	-0.0039	0.2100	-0.3156	-0.0219	0.2622	0.1129	1.0000
13-Nov	0.4656	0.0999	-0.2296	-0.0249	0.2471	0.0757	0.9989
14-Nov	-0.0198	-0.0364	-0.1469	-0.0260	0.2266	0.0366	0.9977
15-Nov	-0.0729	-0.0389	-0.0607	-0.0281	0.2014	-0.0038	0.9966
16-Nov	-0.1778	-0.0275	0.0429	-0.0323	0.1722	-0.0452	0.9955
17-Nov	0.2191	-0.0935	0.1664	-0.0361	0.1398	-0.0872	0.9944
18-Nov	-0.0306	-0.2519	0.3010	-0.0373	0.1049	-0.1293	0.9933
19-Nov	0.1456	-0.1779	0.3759	-0.0388	0.2200	-0.1145	1.0000
20-Nov	0.1106	0.1678	0.3943	-0.0272	0.1705	-0.1439	0.9989
21-Nov	-0.1804	0.2396	0.3588	-0.0119	0.1204	-0.1732	0.9979
22-Nov	0.0379	0.0144	0.2847	0.0054	0.0708	-0.2021	0.9968

Date	IMF1	IMF2	IMF3	IMF4	IMF5	IMF6	Residue
23-Nov	-0.1143	-0.1790	0.1953	0.0248	0.0231	-0.2305	0.9958
24-Nov	0.1877	-0.0774	0.1143	0.0476	-0.0215	-0.2581	0.9947
25-Nov	0.1436	0.1141	0.0579	0.0753	-0.0620	-0.2848	0.9937
26-Nov	-0.1012	0.1598	0.0528	0.1270	-0.0430	-0.2903	1.0000
27-Nov	0.0353	-0.1602	-0.0373	0.1726	-0.1082	-0.2848	0.9990
28-Nov	0.1065	-0.2797	-0.1471	0.2232	-0.1653	-0.2778	0.9980
29-Nov	-0.1168	-0.1503	-0.2651	0.2780	-0.2134	-0.2695	0.9971
30-Nov	-0.1538	0.0683	-0.3770	0.3365	-0.2530	-0.2598	0.9962
1-Dec	0.2373	0.3252	-0.4404	0.3947	-0.2848	-0.2490	0.9953
2-Dec	-0.3710	0.2938	-0.4169	0.4478	-0.3094	-0.2372	0.9944
3-Dec	0.1751	-0.0597	-0.3959	0.5597	-0.3199	-0.1500	1.0000
4-Dec	0.1608	-0.2879	-0.1291	0.5464	-0.3199	-0.1601	0.9992
5-Dec	0.1985	-0.1558	0.0501	0.5152	-0.3165	-0.1697	0.9983
6-Dec	-0.0138	0.0830	0.1304	0.4641	-0.3112	-0.1789	0.9975
7-Dec	-0.1302	0.1408	0.1217	0.3918	-0.3056	-0.1876	0.9968
8-Dec	0.2116	-0.0387	0.0656	0.3011	-0.3012	-0.1960	0.9960
9-Dec	0.0775	-0.1995	0.0293	0.1970	-0.2977	-0.2043	0.9953
10-Dec	-0.1046	-0.0937	0.0657	0.2880	-0.2727	-0.1409	1.0000
11-Dec	0.0048	-0.0722	-0.0124	0.1651	-0.2321	-0.1544	0.9993
12-Dec	0.0998	-0.0496	-0.0732	0.0383	-0.1910	-0.1681	0.9987
13-Dec	0.1712	0.1931	-0.1339	-0.0848	-0.1492	-0.1822	0.9981
14-Dec	0.1302	0.3982	-0.1935	-0.1960	-0.1063	-0.1967	0.9975
15-Dec	0.3034	0.1417	-0.2433	-0.2870	-0.0621	-0.2118	0.9970
16-Dec	-0.6786	-0.2196	-0.2518	-0.3508	-0.0165	-0.2275	0.9964
17-Dec	0.4225	-0.2445	-0.2136	-0.3090	-0.0518	-0.2272	1.0000
18-Dec	0.1785	-0.0810	-0.2104	-0.3307	-0.0263	-0.2320	0.9995
19-Dec	0.2639	0.0500	-0.1355	-0.3412	0.0041	-0.2374	0.9991
20-Dec	0.0445	0.0864	-0.0194	-0.3496	0.0398	-0.2437	0.9987
21-Dec	-0.1089	0.0579	0.0871	-0.3591	0.0809	-0.2508	0.9984
22-Dec	0.1614	0.0692	0.1537	-0.3720	0.1279	-0.2589	0.9981
23-Dec	0.2307	0.1344	0.1629	-0.3897	0.1801	-0.2679	0.9978
24-Dec	0.1854	0.2528	0.1880	-0.1802	0.1214	-0.2493	0.9996
25-Dec	-0.3511	0.1690	0.1755	-0.2031	0.1732	-0.2558	0.9994
26-Dec	-0.1793	0.0442	0.2092	-0.2171	0.2147	-0.2624	0.9992
27-Dec	0.4507	-0.0891	0.3023	-0.2116	0.2374	-0.2686	0.9991
28-Dec	-0.2117	-0.3458	0.4314	-0.1887	0.2332	-0.2740	0.9990
29-Dec	0.2314	-0.4143	0.5662	-0.1602	0.2001	-0.2781	0.9989
30-Dec	-0.1506	-0.1921	0.6412	-0.1459	0.1540	-0.2807	0.9989
31-Dec	0.2524	-0.0033	0.6197	-0.1612	0.1129	-0.2813	0.9989

Table A2: Ratio factors of IMFs and the residue

Date	IMF1	IMF2	IMF3	IMF4	IMF5	IMF6	Residue
1-Jan	0.0610	-0.0658	0.0066	-0.0490	-0.0776	-0.0048	0.8865
2-Jan	0.0698	-0.1298	-0.0097	-0.0599	-0.0479	0.0029	0.8865
3-Jan	0.0720	-0.0608	-0.0191	-0.0569	-0.0208	0.0088	0.8865
4-Jan	-0.0519	0.0498	-0.0179	-0.0432	-0.0001	0.0127	0.8865
5-Jan	0.0599	0.0590	-0.0055	-0.0238	0.0125	0.0146	0.8866
6-Jan	0.0116	0.0016	0.0091	-0.0039	0.0159	0.0148	0.8866
7-Jan	-0.0087	0.0207	0.0158	0.0129	0.0095	0.0132	0.8867
8-Jan	-0.1016	0.0954	0.0358	0.0172	-0.0085	-0.0005	0.8868
9-Jan	0.0520	0.0503	0.0345	0.0231	-0.0171	-0.0113	0.8869
10-Jan	0.0532	-0.0421	0.0275	0.0221	-0.0263	-0.0236	0.8870
11-Jan	-0.0452	-0.1056	0.0177	0.0146	-0.0351	-0.0372	0.8872
12-Jan	0.0405	-0.0919	0.0122	0.0034	-0.0424	-0.0520	0.8874
13-Jan	0.0047	-0.0308	0.0114	-0.0080	-0.0471	-0.0677	0.8876
14-Jan	0.0849	0.0212	0.0103	-0.0168	-0.0481	-0.0843	0.8878
15-Jan	-0.0110	0.0515	-0.0170	-0.0148	-0.0178	-0.0729	0.8880
16-Jan	0.0260	0.0592	-0.0349	-0.0156	-0.0153	-0.0848	0.8882
17-Jan	0.0940	0.0344	-0.0486	-0.0094	-0.0100	-0.0973	0.8885
18-Jan	-0.0305	-0.0111	-0.0539	0.0007	-0.0022	-0.1101	0.8888
19-Jan	-0.0409	0.0053	-0.0490	0.0118	0.0075	-0.1231	0.8891
20-Jan	0.0163	0.0471	-0.0374	0.0214	0.0186	-0.1362	0.8895
21-Jan	0.0857	0.0317	-0.0228	0.0280	0.0307	-0.1493	0.8898
22-Jan	-0.0362	-0.0359	0.0301	0.0378	0.0063	-0.0903	0.8902
23-Jan	-0.0536	-0.0514	0.0410	0.0395	0.0125	-0.1007	0.8906
24-Jan	-0.0121	-0.0341	0.0307	0.0335	0.0192	-0.1110	0.8910
25-Jan	-0.0042	0.0061	0.0087	0.0208	0.0257	-0.1211	0.8914
26-Jan	0.0547	0.0383	-0.0146	0.0027	0.0314	-0.1311	0.8919
27-Jan	0.0425	0.0299	-0.0309	-0.0191	0.0358	-0.1408	0.8923
28-Jan	0.0238	0.0115	-0.0388	-0.0416	0.0382	-0.1502	0.8928
29-Jan	0.0649	0.0380	-0.0419	-0.0218	0.0108	-0.1496	0.8747
30-Jan	-0.0374	0.0634	-0.0323	-0.0327	0.0181	-0.1649	0.8752
31-Jan	0.0247	0.0782	-0.0124	-0.0371	0.0219	-0.1801	0.8757
1-Feb	0.0068	0.0611	0.0137	-0.0381	0.0209	-0.1850	0.8940
2-Feb	0.0128	-0.0033	0.0363	-0.0196	0.0161	-0.1986	0.8945
3-Feb	-0.0315	-0.0446	0.0465	0.0120	0.0064	-0.2116	0.8951
4-Feb	0.0727	-0.0250	0.0412	0.0546	-0.0083	-0.2239	0.8957
5-Feb	-0.0610	-0.0582	0.0554	0.0679	-0.0212	-0.2144	0.8962
6-Feb	-0.0069	-0.0237	0.0438	0.0932	-0.0387	-0.2226	0.8968
7-Feb	0.0090	0.0309	0.0147	0.1169	-0.0576	-0.2298	0.8975
8-Feb	-0.0225	0.0294	-0.0162	0.1348	-0.0773	-0.2361	0.8981
9-Feb	0.0816	0.0100	-0.0322	0.1429	-0.0973	-0.2413	0.8988
10-Feb	-0.0282	-0.0085	-0.0320	0.1390	-0.1169	-0.2454	0.8995
11-Feb	0.0423	-0.0072	-0.0151	0.1227	-0.1354	-0.2482	0.9002
12-Feb	-0.0573	-0.0237	-0.0121	0.1380	-0.1398	-0.2457	0.9008
13-Feb	0.0329	-0.0007	0.0210	0.0994	-0.1446	-0.2278	0.9015

Date	IMF1	IMF2	IMF3	IMF4	IMF5	IMF6	Residue
14-Feb	0.0857	0.0283	0.0494	0.0487	-0.1470	-0.2085	0.9022
15-Feb	0.0225	0.0311	0.0636	-0.0115	-0.1466	-0.1878	0.9030
16-Feb	-0.0703	-0.0134	0.0632	-0.0775	-0.1430	-0.1658	0.9037
17-Feb	-0.0138	-0.0487	0.0479	-0.1452	-0.1357	-0.1426	0.9045
18-Feb	0.0925	-0.0173	0.0132	-0.2104	-0.1247	-0.1185	0.9053
19-Feb	0.0651	0.0624	-0.0355	-0.2419	-0.1355	-0.1761	0.9060
20-Feb	0.1012	0.0683	-0.0702	-0.2787	-0.1137	-0.1664	0.9068
21-Feb	-0.0679	0.0429	-0.1033	-0.3011	-0.0876	-0.1558	0.9076
22-Feb	0.0832	-0.0237	-0.1181	-0.3072	-0.0572	-0.1445	0.9084
23-Feb	-0.0306	-0.0531	-0.1061	-0.2967	-0.0227	-0.1324	0.9092
24-Feb	-0.0310	-0.0451	-0.0700	-0.2703	0.0154	-0.1198	0.9101
25-Feb	0.0932	-0.0037	-0.0151	-0.2294	0.0560	-0.1065	0.9109
26-Feb	0.0596	0.0093	0.0426	-0.1617	0.0264	-0.1461	0.8871
27-Feb	-0.0752	0.0272	0.0822	-0.1168	0.0532	-0.1390	0.8879
28-Feb	-0.0565	0.0409	0.1073	-0.0674	0.0799	-0.1313	0.8887
29-Feb	0.1125	0.0387	0.1125	-0.0587	0.1158	-0.1247	0.8987
1-Mar	0.1263	0.0280	0.1442	-0.0209	0.1484	-0.1110	0.9141
2-Mar	-0.0344	-0.0472	0.1557	0.0390	0.1826	-0.1033	0.9149
3-Mar	-0.0931	-0.0717	0.1490	0.0924	0.2136	-0.0953	0.9158
4-Mar	0.1062	-0.0160	0.1021	0.1365	0.2407	-0.0871	0.9167
5-Mar	-0.0150	0.0023	0.0689	0.1866	0.2234	-0.1151	0.9174
6-Mar	-0.0402	-0.0140	-0.0013	0.2129	0.2263	-0.0885	0.9183
7-Mar	-0.0589	-0.0120	-0.0655	0.2261	0.2233	-0.0614	0.9192
8-Mar	-0.0036	0.0319	-0.0969	0.2259	0.2145	-0.0341	0.9200
9-Mar	0.0116	0.0591	-0.0959	0.2136	0.2003	-0.0067	0.9209
10-Mar	0.0024	0.0003	-0.0795	0.1918	0.1812	0.0206	0.9218
11-Mar	0.0340	-0.0464	-0.0761	0.1639	0.1576	0.0477	0.9227
12-Mar	-0.0604	-0.0559	-0.1158	0.1075	0.1529	0.0171	0.9235
13-Mar	0.0539	0.0135	-0.1128	0.0701	0.1146	0.0386	0.9244
14-Mar	0.0139	0.0670	-0.0860	0.0405	0.0730	0.0599	0.9253
15-Mar	0.0503	0.0438	-0.0348	0.0231	0.0289	0.0810	0.9262
16-Mar	-0.0001	-0.0352	0.0142	0.0189	-0.0167	0.1016	0.9271
17-Mar	-0.1244	-0.0471	0.0329	0.0265	-0.0626	0.1218	0.9280
18-Mar	-0.0256	-0.0065	0.0307	0.0407	-0.1078	0.1414	0.9288
19-Mar	0.0049	-0.0274	0.0315	0.0556	-0.0947	0.1175	0.9297
20-Mar	-0.0559	0.0009	0.0183	0.0743	-0.1174	0.1320	0.9306
21-Mar	0.1096	0.0141	0.0038	0.0855	-0.1373	0.1456	0.9315
22-Mar	0.1719	0.0082	-0.0108	0.0890	-0.1535	0.1583	0.9323
23-Mar	-0.0960	-0.0076	-0.0229	0.0848	-0.1651	0.1699	0.9332
24-Mar	0.1116	0.0147	-0.0271	0.0734	-0.1716	0.1806	0.9341
25-Mar	0.0179	-0.0459	-0.0276	0.0569	-0.1722	0.1902	0.9349
26-Mar	-0.0485	-0.0968	-0.0598	0.0214	-0.1439	0.2252	0.9358
27-Mar	0.1566	0.0317	-0.0465	-0.0186	-0.1280	0.2182	0.9367
28-Mar	0.1124	0.1521	-0.0367	-0.0442	-0.1082	0.2098	0.9375
29-Mar	0.0421	0.0769	-0.0326	-0.0536	-0.0854	0.2001	0.9384
30-Mar	-0.2186	-0.0500	-0.0165	-0.0479	-0.0599	0.1890	0.9392

Date	IMF1	IMF2	IMF3	IMF4	IMF5	IMF6	Residue
31-Mar	0.0613	-0.0176	0.0140	-0.0298	-0.0320	0.1768	0.9401
1-Apr	0.0468	0.0813	0.0481	-0.0035	-0.0026	0.1910	0.9615
2-Apr	0.0317	0.0295	0.0544	0.0268	-0.0515	0.1863	0.9417
3-Apr	-0.0897	-0.0703	0.0669	0.0675	-0.0244	0.1772	0.9425
4-Apr	0.0391	-0.0484	0.0595	0.0919	0.0049	0.1671	0.9433
5-Apr	0.0177	0.0101	0.0400	0.0994	0.0357	0.1563	0.9442
6-Apr	-0.0859	-0.0110	0.0276	0.0921	0.0674	0.1446	0.9450
7-Apr	0.0647	-0.0123	0.0223	0.0725	0.0992	0.1322	0.9457
8-Apr	-0.1228	0.0429	0.0258	0.0435	0.1304	0.1191	0.9465
9-Apr	0.0141	0.0906	-0.0069	0.0730	0.1342	0.1716	0.9473
10-Apr	-0.1044	0.1089	-0.0072	0.0326	0.1636	0.1582	0.9481
11-Apr	0.0625	0.1049	0.0186	-0.0114	0.1908	0.1441	0.9488
12-Apr	-0.0094	-0.0067	0.0770	-0.0546	0.2152	0.1292	0.9496
13-Apr	0.0152	-0.0347	0.1318	-0.0929	0.2363	0.1137	0.9503
14-Apr	-0.0324	-0.0046	0.1515	-0.1221	0.2531	0.0976	0.9510
15-Apr	-0.0145	-0.0042	0.1304	-0.1387	0.2652	0.0811	0.9518
16-Apr	0.1009	0.0346	0.0680	-0.1290	0.2842	0.1422	0.9525
17-Apr	-0.0687	-0.0359	0.0222	-0.1212	0.2785	0.1107	0.9532
18-Apr	-0.1357	-0.0732	0.0117	-0.1001	0.2670	0.0787	0.9539
19-Apr	0.0856	0.0077	0.0321	-0.0678	0.2498	0.0465	0.9545
20-Apr	0.2180	0.0712	0.0679	-0.0289	0.2273	0.0141	0.9552
21-Apr	-0.1335	0.0293	0.1001	0.0122	0.2000	-0.0181	0.9559
22-Apr	0.1147	-0.0032	0.1097	0.0511	0.1684	-0.0499	0.9565
23-Apr	-0.0065	-0.0653	0.1403	0.0532	0.1845	-0.0099	0.9572
24-Apr	0.0700	-0.1072	0.0521	0.0876	0.1399	-0.0322	0.9578
25-Apr	0.0212	-0.0848	-0.0566	0.1123	0.0922	-0.0540	0.9584
26-Apr	0.0454	0.0244	-0.1425	0.1265	0.0425	-0.0751	0.9590
27-Apr	0.0534	0.1414	-0.1848	0.1299	-0.0080	-0.0954	0.9596
28-Apr	-0.0021	0.1372	-0.1823	0.1224	-0.0581	-0.1148	0.9602
29-Apr	-0.0124	0.0428	-0.1530	0.1063	-0.1070	-0.1333	0.9607
30-Apr	0.1508	0.0396	-0.0966	0.0976	-0.0966	-0.0854	0.9467
1-May	-0.2573	0.1520	-0.0537	0.0645	-0.1376	-0.0792	0.9618
2-May	0.0279	0.1369	-0.0124	0.0401	-0.1748	-0.0817	0.9624
3-May	0.0967	-0.0195	0.0156	0.0172	-0.2079	-0.0830	0.9629
4-May	-0.0028	-0.1745	0.0351	-0.0051	-0.2364	-0.0830	0.9634
5-May	0.2019	-0.1912	0.0474	-0.0273	-0.2598	-0.0819	0.9639
6-May	-0.0421	-0.0930	0.0522	-0.0494	-0.2776	-0.0795	0.9644
7-May	0.0137	0.0681	0.0386	-0.0664	-0.3051	-0.0798	0.9649
8-May	0.0370	0.1514	0.0129	-0.0801	-0.2930	-0.0825	0.9653
9-May	0.0433	0.1688	-0.0152	-0.0884	-0.2763	-0.0843	0.9658
10-May	0.0743	0.1965	-0.0311	-0.0904	-0.2558	-0.0852	0.9663
11-May	-0.2564	0.1430	-0.0249	-0.0859	-0.2321	-0.0853	0.9667
12-May	0.0423	0.0298	0.0002	-0.0757	-0.2060	-0.0847	0.9671
13-May	-0.0527	-0.0553	0.0295	-0.0619	-0.1781	-0.0836	0.9676
14-May	0.1329	-0.1704	0.0368	-0.0414	-0.1814	-0.1011	0.9680
15-May	0.0834	-0.2203	0.0492	-0.0202	-0.1426	-0.1014	0.9684

Date	IMF1	IMF2	IMF3	IMF4	IMF5	IMF6	Residue
16-May	0.2183	-0.1829	0.0546	-0.0005	-0.1033	-0.1011	0.9688
17-May	0.0104	-0.0457	0.0400	0.0162	-0.0642	-0.1004	0.9692
18-May	0.0118	0.1483	-0.0013	0.0303	-0.0263	-0.0992	0.9696
19-May	-0.1368	0.2422	-0.0578	0.0413	0.0098	-0.0978	0.9700
20-May	-0.0438	0.1262	-0.0991	0.0481	0.0433	-0.0964	0.9704
21-May	0.1494	0.0076	-0.0683	0.0596	-0.0262	-0.1136	0.9707
22-May	0.0840	-0.0328	-0.0511	0.0450	0.0020	-0.1046	0.9711
23-May	0.1077	-0.0085	-0.0285	0.0310	0.0275	-0.0956	0.9715
24-May	-0.1648	0.0102	0.0046	0.0179	0.0499	-0.0867	0.9718
25-May	0.0803	-0.0298	0.0377	0.0060	0.0688	-0.0782	0.9722
26-May	0.1076	-0.1080	0.0576	-0.0052	0.0840	-0.0699	0.9726
27-May	-0.0546	-0.1024	0.0647	-0.0182	0.0957	-0.0620	0.9729
28-May	0.0127	-0.0034	0.0355	-0.0337	0.1118	-0.0636	0.9733
29-May	0.0169	0.2044	0.0436	-0.0201	0.1064	-0.0491	0.9736
30-May	-0.0223	0.2003	0.0545	-0.0104	0.0986	-0.0350	0.9739
31-May	-0.0551	0.0851	0.0521	-0.0031	0.0894	-0.0213	0.9743
1-Jun	0.0380	0.0195	0.0254	0.0034	0.0704	-0.0087	0.9834
2-Jun	0.0998	0.0500	-0.0151	0.0101	0.0621	0.0051	0.9838
3-Jun	0.0073	0.0739	-0.0679	0.0180	0.0543	0.0184	0.9841
4-Jun	-0.0184	0.0389	-0.1102	0.0103	0.0232	-0.0005	0.9756
5-Jun	0.0205	-0.0794	-0.1529	0.0001	0.0292	0.0099	0.9759
6-Jun	0.0640	-0.1558	-0.1675	-0.0018	0.0367	0.0197	0.9762
7-Jun	0.0858	-0.1251	-0.1477	0.0081	0.0458	0.0290	0.9766
8-Jun	0.0053	-0.0225	-0.0920	0.0288	0.0569	0.0378	0.9769
9-Jun	0.0178	0.0592	-0.0036	0.0576	0.0698	0.0460	0.9772
10-Jun	0.0033	0.0631	0.1067	0.0908	0.0844	0.0536	0.9776
11-Jun	-0.1143	-0.0700	0.1625	0.1367	0.0282	0.0657	0.9779
12-Jun	0.1100	-0.1174	0.2140	0.1583	0.0282	0.0595	0.9782
13-Jun	-0.0583	-0.0475	0.2165	0.1695	0.0295	0.0528	0.9785
14-Jun	0.1365	0.0275	0.1723	0.1670	0.0319	0.0460	0.9788
15-Jun	-0.0422	0.0320	0.0982	0.1525	0.0350	0.0391	0.9792
16-Jun	-0.0102	0.0112	0.0112	0.1287	0.0386	0.0324	0.9795
17-Jun	-0.1030	0.0166	-0.0753	0.0987	0.0427	0.0260	0.9798
18-Jun	0.0288	0.0367	-0.1641	0.0849	0.0196	0.0158	0.9801
19-Jun	0.1109	0.0513	-0.2030	0.0595	0.0345	0.0048	0.9804
20-Jun	-0.0826	-0.0040	-0.2061	0.0343	0.0496	-0.0059	0.9807
21-Jun	0.0440	-0.0262	-0.1785	0.0116	0.0644	-0.0164	0.9811
22-Jun	-0.0733	0.0450	-0.1283	-0.0073	0.0786	-0.0263	0.9814
23-Jun	0.0548	0.0592	-0.0677	-0.0213	0.0917	-0.0358	0.9817
24-Jun	-0.0024	-0.0793	-0.0104	-0.0302	0.1039	-0.0447	0.9820
25-Jun	0.0222	-0.1161	0.0533	-0.0165	0.1380	-0.0464	0.9823
26-Jun	0.0034	-0.0302	0.0907	-0.0192	0.1399	-0.0449	0.9826
27-Jun	-0.0860	0.0634	0.1347	-0.0200	0.1410	-0.0429	0.9829
28-Jun	0.1019	0.0668	0.1561	-0.0210	0.1413	-0.0404	0.9832
29-Jun	-0.0136	-0.0065	0.1348	-0.0242	0.1409	-0.0375	0.9835
30-Jun	-0.0437	-0.0640	0.0711	-0.0309	0.1401	-0.0340	0.9838

Date	IMF1	IMF2	IMF3	IMF4	IMF5	IMF6	Residue
1-Jul	0.0362	-0.0509	-0.0076	-0.0421	0.1177	-0.0291	0.9924
2-Jul	0.0649	0.0222	-0.0625	-0.0530	0.1097	-0.0476	0.9927
3-Jul	-0.0047	0.0967	-0.1033	-0.0721	0.0976	-0.0414	0.9930
4-Jul	-0.0482	0.1215	-0.1134	-0.0932	0.0858	-0.0347	0.9933
5-Jul	0.0943	0.0480	-0.1000	-0.1136	0.0742	-0.0275	0.9935
6-Jul	0.0578	-0.0606	-0.0717	-0.1308	0.0628	-0.0201	0.9938
7-Jul	-0.0499	-0.0933	-0.0387	-0.1432	0.0517	-0.0123	0.9941
8-Jul	0.0854	-0.0506	-0.0116	-0.1496	0.0408	-0.0042	0.9944
9-Jul	-0.0058	-0.0154	0.0229	-0.1559	0.0629	-0.0313	0.9863
10-Jul	0.0506	-0.0199	0.0605	-0.1392	0.0504	-0.0133	0.9866
11-Jul	0.0695	-0.0287	0.0910	-0.1162	0.0379	0.0047	0.9869
12-Jul	-0.0384	-0.0041	0.1130	-0.0875	0.0256	0.0226	0.9871
13-Jul	-0.0600	0.0463	0.1250	-0.0550	0.0134	0.0403	0.9874
14-Jul	-0.0229	0.0792	0.1221	-0.0210	0.0011	0.0577	0.9876
15-Jul	-0.0004	0.0574	0.1040	0.0128	-0.0112	0.0747	0.9879
16-Jul	0.0519	0.0095	0.0952	-0.0024	0.0387	0.0622	0.9881
17-Jul	0.0224	-0.0331	0.0462	0.0237	0.0277	0.0636	0.9883
18-Jul	0.0366	-0.0530	-0.0090	0.0463	0.0158	0.0647	0.9885
19-Jul	0.0723	-0.0310	-0.0721	0.0649	0.0031	0.0654	0.9888
20-Jul	-0.0057	0.0161	-0.1350	0.0790	-0.0107	0.0656	0.9890
21-Jul	-0.0101	0.0514	-0.1880	0.0889	-0.0257	0.0653	0.9892
22-Jul	0.0630	0.0629	-0.2220	0.0962	-0.0422	0.0644	0.9893
23-Jul	-0.0819	0.0413	-0.2409	0.1116	-0.0253	0.0098	0.9895
24-Jul	-0.0021	0.0479	-0.2250	0.1202	-0.0466	0.0166	0.9897
25-Jul	-0.0639	0.0548	-0.1913	0.1299	-0.0691	0.0228	0.9899
26-Jul	0.0508	0.0426	-0.1491	0.1400	-0.0926	0.0284	0.9900
27-Jul	-0.0061	0.0016	-0.1075	0.1498	-0.1171	0.0334	0.9902
28-Jul	0.0156	-0.0513	-0.0743	0.1582	-0.1420	0.0378	0.9903
29-Jul	0.0465	-0.0972	-0.0544	0.1645	-0.1670	0.0417	0.9904
30-Jul	-0.0808	-0.0880	-0.0740	0.1265	-0.1562	0.0391	0.9905
31-Jul	-0.0656	-0.0457	-0.0566	0.1210	-0.1737	0.0400	0.9906
1-Aug	0.0724	0.0312	-0.0412	0.1220	-0.1906	0.0374	0.9933
2-Aug	-0.0082	0.1025	-0.0290	0.1167	-0.2069	0.0376	0.9934
3-Aug	-0.0804	0.0965	-0.0158	0.1130	-0.2220	0.0377	0.9934
4-Aug	0.0285	0.0292	-0.0019	0.1097	-0.2353	0.0377	0.9935
5-Aug	-0.0281	-0.0297	0.0110	0.1053	-0.2461	0.0377	0.9936
6-Aug	-0.0714	-0.0137	0.0315	0.1218	-0.2399	0.0006	0.9911
7-Aug	0.0701	-0.0749	0.0334	0.1103	-0.2345	0.0080	0.9911
8-Aug	-0.0163	-0.1238	0.0300	0.0972	-0.2254	0.0159	0.9911
9-Aug	0.0681	-0.0793	0.0194	0.0810	-0.2126	0.0244	0.9911
10-Aug	-0.0517	0.0635	0.0039	0.0606	-0.1964	0.0336	0.9911
11-Aug	0.0746	0.1597	-0.0092	0.0364	-0.1773	0.0436	0.9911
12-Aug	0.0182	0.1254	-0.0117	0.0093	-0.1560	0.0545	0.9911
13-Aug	-0.1572	0.0373	-0.0671	-0.0024	-0.1535	0.0906	0.9911
14-Aug	0.1431	-0.0252	-0.0513	-0.0212	-0.1314	0.0897	0.9910
15-Aug	-0.1433	-0.0239	-0.0209	-0.0399	-0.1083	0.0895	0.9909

Date	IMF1	IMF2	IMF3	IMF4	IMF5	IMF6	Residue
16-Aug	0.0807	-0.0259	0.0160	-0.0582	-0.0846	0.0898	0.9909
17-Aug	-0.0343	-0.0238	0.0527	-0.0758	-0.0610	0.0907	0.9908
18-Aug	0.0335	0.0312	0.0840	-0.0928	-0.0377	0.0922	0.9907
19-Aug	0.0357	0.0967	0.1050	-0.1094	-0.0153	0.0942	0.9906
20-Aug	-0.0353	0.0698	0.1044	-0.0637	-0.0438	0.0925	0.9904
21-Aug	-0.0407	0.0205	0.0947	-0.0682	-0.0235	0.0912	0.9903
22-Aug	0.0387	-0.0331	0.0730	-0.0801	-0.0040	0.0903	0.9901
23-Aug	0.0413	-0.0767	0.0487	-0.0949	0.0140	0.0898	0.9899
24-Aug	0.0135	-0.0775	0.0259	-0.1089	0.0305	0.0898	0.9897
25-Aug	0.0473	-0.0392	0.0085	-0.1199	0.0452	0.0900	0.9895
26-Aug	-0.0341	0.0330	-0.0021	-0.1259	0.0580	0.0905	0.9893
27-Aug	0.0095	0.1087	-0.0392	-0.1181	0.0658	0.0980	0.9891
28-Aug	-0.0443	0.1125	-0.0625	-0.0964	0.0693	0.1018	0.9888
29-Aug	-0.0026	0.0548	-0.0793	-0.0672	0.0703	0.1056	0.9886
30-Aug	-0.0817	-0.0063	-0.0781	-0.0318	0.0687	0.1094	0.9883
31-Aug	0.1205	-0.0515	-0.0611	0.0083	0.0649	0.1130	0.9880
1-Sep	0.0430	-0.0720	-0.0476	0.0627	0.0603	0.1377	0.9802
2-Sep	-0.1017	0.0203	-0.0094	0.1157	0.0530	0.1414	0.9799
3-Sep	0.0781	0.0858	-0.0025	0.1071	0.0320	0.1606	0.9795
4-Sep	0.0948	0.0517	0.0196	0.1356	0.0254	0.1581	0.9792
5-Sep	-0.1048	-0.1114	0.0366	0.1522	0.0181	0.1550	0.9788
6-Sep	0.1018	-0.1844	0.0553	0.1553	0.0109	0.1511	0.9784
7-Sep	0.0236	-0.1480	0.0796	0.1447	0.0045	0.1463	0.9780
8-Sep	-0.1014	-0.0562	0.0997	0.1207	-0.0011	0.1405	0.9775
9-Sep	-0.1706	0.0306	0.1020	0.0841	-0.0056	0.1337	0.9771
10-Sep	0.0429	0.0357	0.0298	0.0127	0.0282	0.0878	0.9840
11-Sep	-0.0458	0.0114	-0.0015	-0.0223	0.0152	0.0855	0.9835
12-Sep	0.0028	-0.0008	-0.0436	-0.0580	0.0025	0.0822	0.9830
13-Sep	-0.0614	-0.0617	-0.0761	-0.0912	-0.0099	0.0777	0.9825
14-Sep	-0.0003	-0.1084	-0.0817	-0.1192	-0.0220	0.0720	0.9819
15-Sep	0.0288	-0.0137	-0.0554	-0.1403	-0.0340	0.0652	0.9814
16-Sep	-0.0300	0.1376	0.0035	-0.1533	-0.0461	0.0571	0.9808
17-Sep	-0.0619	0.1436	0.0322	-0.1577	-0.0316	0.1068	0.9802
18-Sep	-0.0378	0.1581	0.0792	-0.1255	-0.0315	0.0962	0.9796
19-Sep	0.0137	0.0658	0.0947	-0.0868	-0.0322	0.0842	0.9790
20-Sep	0.0934	-0.1049	0.0789	-0.0423	-0.0338	0.0709	0.9784
21-Sep	-0.1278	-0.2144	0.0472	0.0063	-0.0356	0.0566	0.9777
22-Sep	-0.0205	-0.1339	0.0177	0.0562	-0.0375	0.0414	0.9770
23-Sep	-0.0019	-0.0322	0.0078	0.1048	-0.0389	0.0257	0.9764
24-Sep	-0.0553	-0.0308	0.0723	0.1157	0.0054	0.0621	0.9757
25-Sep	0.0399	-0.0681	0.0800	0.1481	-0.0055	0.0462	0.9750
26-Sep	-0.0828	-0.0499	0.0984	0.1729	-0.0156	0.0303	0.9742
27-Sep	0.0760	-0.0022	0.1265	0.1885	-0.0249	0.0145	0.9735
28-Sep	-0.0568	0.0059	0.1528	0.1939	-0.0331	-0.0012	0.9727
29-Sep	0.0541	0.0003	0.1635	0.1897	-0.0401	-0.0165	0.9719
30-Sep	-0.0076	-0.0138	0.1514	0.1769	-0.0457	-0.0314	0.9712

Date	IMF1	IMF2	IMF3	IMF4	IMF5	IMF6	Residue
1-Oct	-0.0104	-0.0933	0.0584	0.1631	-0.0827	-0.0508	0.9529
2-Oct	-0.0395	-0.1188	-0.0124	0.1183	-0.0872	-0.0612	0.9521
3-Oct	-0.0092	-0.0111	-0.0917	0.0684	-0.0901	-0.0709	0.9513
4-Oct	0.1292	0.0465	-0.1598	0.0170	-0.0913	-0.0798	0.9505
5-Oct	-0.0608	0.0609	-0.1958	-0.0316	-0.0907	-0.0878	0.9497
6-Oct	0.0416	0.0089	-0.1961	-0.0741	-0.0880	-0.0950	0.9488
7-Oct	-0.1018	-0.0399	-0.1643	-0.1076	-0.0832	-0.1014	0.9479
8-Oct	0.0108	-0.0792	-0.0409	-0.1564	-0.0934	-0.0490	0.9646
9-Oct	-0.1440	-0.0871	-0.0015	-0.1597	-0.0755	-0.0504	0.9637
10-Oct	0.0700	-0.0745	0.0336	-0.1495	-0.0547	-0.0510	0.9628
11-Oct	0.1539	-0.0715	0.0615	-0.1270	-0.0309	-0.0509	0.9618
12-Oct	-0.0017	-0.0254	0.0813	-0.0939	-0.0042	-0.0502	0.9609
13-Oct	0.0309	0.0334	0.0843	-0.0532	0.0244	-0.0488	0.9599
14-Oct	0.0442	0.0625	0.0715	-0.0085	0.0538	-0.0469	0.9590
15-Oct	0.0324	0.0263	0.0346	0.0277	0.0027	-0.0843	0.9580
16-Oct	-0.1104	0.0434	0.0081	0.0782	0.0180	-0.0761	0.9571
17-Oct	0.0389	0.0648	-0.0086	0.1217	0.0322	-0.0672	0.9561
18-Oct	-0.0356	0.0512	-0.0144	0.1542	0.0451	-0.0576	0.9551
19-Oct	-0.0326	0.0124	-0.0102	0.1725	0.0562	-0.0473	0.9541
20-Oct	0.1683	-0.0285	-0.0077	0.1752	0.0649	-0.0366	0.9531
21-Oct	-0.0809	-0.0411	-0.0179	0.1620	0.0706	-0.0255	0.9520
22-Oct	0.0355	-0.0832	-0.0049	0.1588	0.0438	-0.0062	0.9511
23-Oct	0.0384	-0.0642	-0.0256	0.1127	0.0461	0.0071	0.9500
24-Oct	-0.0391	-0.0529	-0.0420	0.0614	0.0465	0.0203	0.9490
25-Oct	0.0538	-0.0309	-0.0499	0.0091	0.0455	0.0332	0.9479
26-Oct	0.0470	0.0082	-0.0479	-0.0396	0.0436	0.0457	0.9469
27-Oct	-0.0566	0.0437	-0.0418	-0.0793	0.0410	0.0577	0.9458
28-Oct	0.1203	0.0371	-0.0354	-0.1039	0.0384	0.0690	0.9448
29-Oct	-0.0567	-0.0212	-0.0211	-0.1482	0.0477	0.0970	0.9438
30-Oct	-0.0054	0.1098	0.0024	-0.1330	0.0617	0.0983	0.9427
31-Oct	-0.0151	0.1549	0.0395	-0.0953	0.0752	0.0987	0.9416
1-Nov	0.0850	0.0407	0.0758	-0.0466	0.0872	0.1033	0.9119
2-Nov	-0.0297	0.0322	0.1099	0.0119	0.1000	0.1016	0.9108
3-Nov	-0.0116	0.0644	0.1212	0.0638	0.1130	0.0988	0.9098
4-Nov	-0.0386	-0.0331	0.1147	0.0999	0.1263	0.0948	0.9087
5-Nov	-0.0122	-0.0146	0.0965	0.0969	0.1295	0.0692	0.9366
6-Nov	0.0180	-0.0477	0.0421	0.1001	0.1352	0.0620	0.9355
7-Nov	-0.0229	-0.0740	-0.0101	0.0926	0.1400	0.0539	0.9345
8-Nov	0.0390	-0.0836	-0.0500	0.0759	0.1435	0.0450	0.9334
9-Nov	0.0146	-0.0292	-0.0735	0.0537	0.1448	0.0351	0.9323
10-Nov	0.0244	0.0874	-0.0825	0.0308	0.1433	0.0245	0.9313
11-Nov	0.0615	0.1731	-0.0857	0.0120	0.1382	0.0131	0.9302
12-Nov	-0.0014	0.0865	-0.1213	-0.0136	0.1348	0.0558	0.9292
13-Nov	0.1629	0.0412	-0.0882	-0.0155	0.1271	0.0374	0.9281
14-Nov	-0.0069	-0.0150	-0.0564	-0.0162	0.1165	0.0181	0.9271
15-Nov	-0.0255	-0.0160	-0.0233	-0.0175	0.1036	-0.0019	0.9260

Date	IMF1	IMF2	IMF3	IMF4	IMF5	IMF6	Residue
16-Nov	-0.0622	-0.0113	0.0165	-0.0201	0.0886	-0.0223	0.9250
17-Nov	0.0767	-0.0385	0.0640	-0.0225	0.0719	-0.0431	0.9240
18-Nov	-0.0107	-0.1038	0.1157	-0.0232	0.0539	-0.0639	0.9230
19-Nov	0.0454	-0.0670	0.1409	-0.0236	0.1079	-0.0563	0.9220
20-Nov	0.0345	0.0632	0.1478	-0.0166	0.0836	-0.0708	0.9210
21-Nov	-0.0563	0.0902	0.1345	-0.0073	0.0590	-0.0852	0.9201
22-Nov	0.0118	0.0054	0.1067	0.0033	0.0347	-0.0995	0.9191
23-Nov	-0.0357	-0.0674	0.0732	0.0151	0.0114	-0.1134	0.9181
24-Nov	0.0586	-0.0291	0.0428	0.0290	-0.0106	-0.1270	0.9172
25-Nov	0.0448	0.0430	0.0217	0.0459	-0.0304	-0.1402	0.9163
26-Nov	-0.0252	0.0600	0.0212	0.0831	-0.0181	-0.1410	0.9155
27-Nov	0.0088	-0.0602	-0.0149	0.1129	-0.0455	-0.1383	0.9145
28-Nov	0.0265	-0.1051	-0.0590	0.1460	-0.0695	-0.1349	0.9137
29-Nov	-0.0291	-0.0565	-0.1063	0.1819	-0.0898	-0.1309	0.9128
30-Nov	-0.0383	0.0257	-0.1512	0.2202	-0.1065	-0.1262	0.9119
1-Dec	0.0637	0.1051	-0.1971	0.2659	-0.1143	-0.1321	0.8830
2-Dec	-0.0996	0.0950	-0.1866	0.3017	-0.1241	-0.1258	0.8822
3-Dec	0.0497	-0.0224	-0.1467	0.3526	-0.1280	-0.0772	0.9103
4-Dec	0.0456	-0.1082	-0.0479	0.3442	-0.1280	-0.0824	0.9095
5-Dec	0.0564	-0.0586	0.0186	0.3246	-0.1266	-0.0873	0.9087
6-Dec	-0.0039	0.0312	0.0484	0.2924	-0.1245	-0.0920	0.9080
7-Dec	-0.0370	0.0529	0.0451	0.2468	-0.1223	-0.0965	0.9073
8-Dec	0.0601	-0.0145	0.0243	0.1897	-0.1205	-0.1009	0.9066
9-Dec	0.0220	-0.0750	0.0109	0.1241	-0.1191	-0.1051	0.9060
10-Dec	-0.0371	-0.0416	0.0255	0.1758	-0.1222	-0.0826	0.9054
11-Dec	0.0017	-0.0320	-0.0048	0.1008	-0.1040	-0.0906	0.9048
12-Dec	0.0354	-0.0220	-0.0284	0.0234	-0.0856	-0.0986	0.9042
13-Dec	0.0608	0.0857	-0.0519	-0.0517	-0.0668	-0.1069	0.9036
14-Dec	0.0462	0.1767	-0.0751	-0.1197	-0.0476	-0.1154	0.9031
15-Dec	0.1077	0.0629	-0.0944	-0.1752	-0.0278	-0.1242	0.9026
16-Dec	-0.2409	-0.0974	-0.0977	-0.2142	-0.0074	-0.1335	0.9022
17-Dec	0.1759	-0.1074	-0.0886	-0.1872	-0.0234	-0.1542	0.9017
18-Dec	0.0743	-0.0356	-0.0873	-0.2003	-0.0119	-0.1574	0.9013
19-Dec	0.1099	0.0220	-0.0562	-0.2066	0.0019	-0.1611	0.9010
20-Dec	0.0185	0.0379	-0.0081	-0.2117	0.0180	-0.1653	0.9006
21-Dec	-0.0453	0.0254	0.0362	-0.2175	0.0365	-0.1702	0.9003
22-Dec	0.0672	0.0304	0.0638	-0.2253	0.0577	-0.1757	0.9000
23-Dec	0.0960	0.0590	0.0676	-0.2360	0.0813	-0.1818	0.8998
24-Dec	0.0636	0.0865	0.0891	-0.1168	0.0577	-0.1787	0.8996
25-Dec	-0.1205	0.0578	0.0832	-0.1316	0.0824	-0.1833	0.8994
26-Dec	-0.0615	0.0151	0.0991	-0.1407	0.1021	-0.1881	0.8993
27-Dec	0.1546	-0.0305	0.1432	-0.1372	0.1129	-0.1925	0.8991
28-Dec	-0.0726	-0.1183	0.2044	-0.1223	0.1109	-0.1964	0.8991
29-Dec	0.0794	-0.1417	0.2683	-0.1038	0.0952	-0.1994	0.8990
30-Dec	-0.0517	-0.0657	0.3038	-0.0945	0.0733	-0.2012	0.8990
31-Dec	0.0866	-0.0011	0.2936	-0.1045	0.0537	-0.2017	0.8990

Table B1: Forecasted daily peak load of BPS of year 2013

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
1-Jan-13	5556.69	1-Apr-13	6212.66	1-Jul-13	6325.02	1-Oct-13	6053.73
2-Jan-13	5567.31	2-Apr-13	6070.87	2-Jul-13	6287.14	2-Oct-13	5995.66
3-Jan-13	5583.56	3-Apr-13	6107.77	3-Jul-13	6262.08	3-Oct-13	5933.42
4-Jan-13	5603.67	4-Apr-13	6131.28	4-Jul-13	6248.39	4-Oct-13	5876.34
5-Jan-13	5624.70	5-Apr-13	6143.90	5-Jul-13	6244.46	5-Oct-13	5834.18
6-Jan-13	5640.55	6-Apr-13	6153.53	6-Jul-13	6247.82	6-Oct-13	5809.70
7-Jan-13	5645.65	7-Apr-13	6160.64	7-Jul-13	6255.23	7-Oct-13	5802.79
8-Jan-13	5637.74	8-Apr-13	6166.70	8-Jul-13	6262.92	8-Oct-13	5958.45
9-Jan-13	5629.61	9-Apr-13	6200.39	9-Jul-13	6221.09	9-Oct-13	5976.26
10-Jan-13	5615.53	10-Apr-13	6199.26	10-Jul-13	6246.09	10-Oct-13	5999.70
11-Jan-13	5597.50	11-Apr-13	6205.01	11-Jul-13	6270.89	11-Oct-13	6027.25
12-Jan-13	5580.12	12-Apr-13	6221.63	12-Jul-13	6294.66	12-Oct-13	6057.75
13-Jan-13	5565.56	13-Apr-13	6236.36	13-Jul-13	6315.95	13-Oct-13	6086.18
14-Jan-13	5553.58	14-Apr-13	6238.47	14-Jul-13	6331.84	14-Oct-13	6110.73
15-Jan-13	5568.78	15-Apr-13	6226.67	15-Jul-13	6341.47	15-Oct-13	6055.36
16-Jan-13	5558.31	16-Apr-13	6254.06	16-Jul-13	6355.87	16-Oct-13	6071.91
17-Jan-13	5553.60	17-Apr-13	6223.98	17-Jul-13	6342.94	17-Oct-13	6089.29
18-Jan-13	5555.18	18-Apr-13	6209.03	18-Jul-13	6325.73	18-Oct-13	6106.07
19-Jan-13	5562.19	19-Apr-13	6206.85	19-Jul-13	6302.98	19-Oct-13	6120.29
20-Jan-13	5572.05	20-Apr-13	6210.11	20-Jul-13	6277.62	20-Oct-13	6126.58
21-Jan-13	5582.64	21-Apr-13	6210.10	21-Jul-13	6253.47	21-Oct-13	6120.20
22-Jan-13	5626.26	22-Apr-13	6197.99	22-Jul-13	6234.40	22-Oct-13	6112.50
23-Jan-13	5631.76	23-Apr-13	6245.15	23-Jul-13	6215.18	23-Oct-13	6088.18
24-Jan-13	5626.45	24-Apr-13	6191.01	24-Jul-13	6217.07	24-Oct-13	6062.33
25-Jan-13	5614.14	25-Apr-13	6123.50	25-Jul-13	6225.15	25-Oct-13	6038.36
26-Jan-13	5598.94	26-Apr-13	6059.79	26-Jul-13	6235.74	26-Oct-13	6018.78
27-Jan-13	5584.43	27-Apr-13	6008.62	27-Jul-13	6244.99	27-Oct-13	6003.71
28-Jan-13	5572.07	28-Apr-13	5971.05	28-Jul-13	6249.92	28-Oct-13	5994.31
29-Jan-13	5447.94	29-Apr-13	5941.64	29-Jul-13	6248.48	29-Oct-13	5996.41
30-Jan-13	5446.69	30-Apr-13	5902.38	30-Jul-13	6231.60	30-Oct-13	6013.46
31-Jan-13	5450.12	1-May-13	5981.34	31-Jul-13	6227.22	31-Oct-13	6043.71
1-Feb-13	5572.61	2-May-13	5968.34	1-Aug-13	6239.12	1-Nov-13	5897.46
2-Feb-13	5582.21	3-May-13	5953.59	2-Aug-13	6233.06	2-Nov-13	5933.52
3-Feb-13	5589.79	4-May-13	5939.10	3-Aug-13	6228.43	3-Nov-13	5957.64
4-Feb-13	5593.26	5-May-13	5925.38	4-Aug-13	6225.27	4-Nov-13	5968.34
5-Feb-13	5604.55	6-May-13	5912.70	5-Aug-13	6222.51	5-Nov-13	6125.27
6-Feb-13	5599.47	7-May-13	5887.60	6-Aug-13	6204.97	6-Nov-13	6098.14
7-Feb-13	5586.86	8-May-13	5880.84	7-Aug-13	6208.47	7-Nov-13	6066.72
8-Feb-13	5571.30	9-May-13	5878.45	8-Aug-13	6211.63	8-Nov-13	6035.22
9-Feb-13	5558.25	10-May-13	5885.82	9-Aug-13	6213.15	9-Nov-13	6006.21
10-Feb-13	5547.60	11-May-13	5906.45	10-Aug-13	6213.41	10-Nov-13	5980.53
11-Feb-13	5539.96	12-May-13	5938.30	11-Aug-13	6215.14	11-Nov-13	5956.22
12-Feb-13	5549.91	13-May-13	5974.46	12-Aug-13	6221.48	12-Nov-13	5946.51

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
13-Feb-13	5558.77	14-May-13	5976.77	13-Aug-13	6215.78	13-Nov-13	5937.67
14-Feb-13	5563.29	15-May-13	6014.78	14-Aug-13	6226.50	14-Nov-13	5926.72
15-Feb-13	5560.97	16-May-13	6050.08	15-Aug-13	6243.72	15-Nov-13	5914.31
16-Feb-13	5553.42	17-May-13	6076.53	16-Aug-13	6264.17	16-Nov-13	5902.65
17-Feb-13	5542.17	18-May-13	6091.15	17-Aug-13	6285.02	17-Nov-13	5893.03
18-Feb-13	5527.27	19-May-13	6097.72	18-Aug-13	6304.08	18-Nov-13	5884.85
19-Feb-13	5464.25	20-May-13	6107.03	19-Aug-13	6318.90	19-Nov-13	5923.75
20-Feb-13	5459.14	21-May-13	6076.55	20-Aug-13	6318.37	20-Nov-13	5901.15
21-Feb-13	5463.35	22-May-13	6100.88	21-Aug-13	6323.05	21-Nov-13	5871.59
22-Feb-13	5483.94	23-May-13	6125.98	22-Aug-13	6319.72	22-Nov-13	5837.28
23-Feb-13	5524.22	24-May-13	6153.55	23-Aug-13	6313.57	23-Nov-13	5801.97
24-Feb-13	5582.48	25-May-13	6179.39	24-Aug-13	6307.58	24-Nov-13	5769.87
25-Feb-13	5655.55	26-May-13	6198.04	25-Aug-13	6303.86	25-Nov-13	5744.02
26-Feb-13	5515.13	27-May-13	6208.86	26-Aug-13	6303.70	26-Nov-13	5759.94
27-Feb-13	5572.51	28-May-13	6202.19	27-Aug-13	6299.37	27-Nov-13	5737.49
28-Feb-13	5626.37	29-May-13	6217.42	28-Aug-13	6301.34	28-Nov-13	5715.81
1-Mar-13	5869.95	30-May-13	6230.57	29-Aug-13	6307.14	29-Nov-13	5696.54
2-Mar-13	5927.23	31-May-13	6236.54	30-Aug-13	6320.79	30-Nov-13	5681.69
3-Mar-13	5973.27	1-Jun-13	6282.36	31-Aug-13	6340.89	1-Dec-13	5490.63
4-Mar-13	5998.04	2-Jun-13	6273.96	1-Sep-13	6328.71	2-Dec-13	5501.41
5-Mar-13	5984.81	3-Jun-13	6261.36	2-Sep-13	6359.84	3-Dec-13	5738.20
6-Mar-13	5989.41	4-Jun-13	6160.01	3-Sep-13	6355.12	4-Dec-13	5765.43
7-Mar-13	5987.96	5-Jun-13	6150.67	4-Sep-13	6367.32	5-Dec-13	5776.79
8-Mar-13	5990.64	6-Jun-13	6155.93	5-Sep-13	6372.03	6-Dec-13	5769.81
9-Mar-13	5998.14	7-Jun-13	6179.75	6-Sep-13	6371.75	7-Dec-13	5745.10
10-Mar-13	6004.89	8-Jun-13	6222.51	7-Sep-13	6368.02	8-Dec-13	5709.12
11-Mar-13	6001.60	9-Jun-13	6281.82	8-Sep-13	6357.33	9-Dec-13	5672.56
12-Mar-13	5950.33	10-Jun-13	6351.96	9-Sep-13	6334.79	10-Dec-13	5704.68
13-Mar-13	5931.70	11-Jun-13	6367.39	10-Sep-13	6318.15	11-Dec-13	5666.06
14-Mar-13	5923.21	12-Jun-13	6394.53	11-Sep-13	6280.45	12-Dec-13	5629.29
15-Mar-13	5927.41	13-Jun-13	6399.17	12-Sep-13	6237.86	13-Dec-13	5593.69
16-Mar-13	5934.86	14-Jun-13	6380.95	13-Sep-13	6199.43	14-Dec-13	5561.41
17-Mar-13	5934.71	15-Jun-13	6346.78	14-Sep-13	6172.79	15-Dec-13	5535.76
18-Mar-13	5929.34	16-Jun-13	6304.44	15-Sep-13	6160.58	16-Dec-13	5523.22
19-Mar-13	5935.89	17-Jun-13	6260.30	16-Sep-13	6163.28	17-Dec-13	5514.51
20-Mar-13	5938.24	18-Jun-13	6203.86	17-Sep-13	6203.61	18-Dec-13	5512.22
21-Mar-13	5938.23	19-Jun-13	6183.65	18-Sep-13	6225.05	19-Dec-13	5525.30
22-Mar-13	5936.84	20-Jun-13	6177.60	19-Sep-13	6235.47	20-Dec-13	5546.83
23-Mar-13	5935.50	21-Jun-13	6184.37	20-Sep-13	6234.86	21-Dec-13	5567.79
24-Mar-13	5936.84	22-Jun-13	6201.23	21-Sep-13	6228.84	22-Dec-13	5583.05
25-Mar-13	5940.41	23-Jun-13	6223.70	22-Sep-13	6223.74	23-Dec-13	5589.12
26-Mar-13	5954.45	24-Jun-13	6246.66	23-Sep-13	6225.52	24-Dec-13	5631.02
27-Mar-13	5954.82	25-Jun-13	6297.39	24-Sep-13	6295.24	25-Dec-13	5633.58
28-Mar-13	5960.99	26-Jun-13	6314.66	25-Sep-13	6291.72	26-Dec-13	5644.15
29-Mar-13	5972.37	27-Jun-13	6334.88	26-Sep-13	6289.68	27-Dec-13	5665.77

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
30-Mar-13	5995.06	28-Jun-13	6346.20	27-Sep-13	6288.22	28-Dec-13	5691.44
31-Mar-13	6028.90	29-Jun-13	6339.96	28-Sep-13	6282.60	29-Dec-13	5712.35
		30-Jun-13	6316.07	29-Sep-13	6268.07	30-Dec-13	5716.02
				30-Sep-13	6242.26	31-Dec-13	5696.67

Table B2: Forecasted daily peak load of BPS of year 2014

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
1-Jan-14	5932.94	1-Apr-14	6635.69	1-Jul-14	6755.22	1-Oct-14	6466.14
2-Jan-14	5944.45	2-Apr-14	6484.18	2-Jul-14	6714.45	2-Oct-14	6403.46
3-Jan-14	5962.12	3-Apr-14	6524.29	3-Jul-14	6687.36	3-Oct-14	6336.27
4-Jan-14	5983.97	4-Apr-14	6549.92	4-Jul-14	6672.40	4-Oct-14	6274.60
5-Jan-14	6006.80	5-Apr-14	6563.71	5-Jul-14	6667.88	5-Oct-14	6228.93
6-Jan-14	6024.00	6-Apr-14	6574.13	6-Jul-14	6671.20	6-Oct-14	6202.25
7-Jan-14	6029.60	7-Apr-14	6581.71	7-Jul-14	6678.90	7-Oct-14	6194.47
8-Jan-14	6020.98	8-Apr-14	6588.04	8-Jul-14	6686.99	8-Oct-14	6360.30
9-Jan-14	6012.25	9-Apr-14	6624.66	9-Jul-14	6642.32	9-Oct-14	6379.45
10-Jan-14	5997.05	10-Apr-14	6623.16	10-Jul-14	6669.20	10-Oct-14	6404.80
11-Jan-14	5977.55	11-Apr-14	6628.94	11-Jul-14	6695.96	11-Oct-14	6434.73
12-Jan-14	5958.72	12-Apr-14	6646.31	12-Jul-14	6721.69	12-Oct-14	6467.97
13-Jan-14	5942.90	13-Apr-14	6661.70	13-Jul-14	6744.80	13-Oct-14	6499.10
14-Jan-14	5929.92	14-Apr-14	6663.68	14-Jul-14	6762.17	14-Oct-14	6526.15
15-Jan-14	5946.49	15-Apr-14	6650.89	15-Jul-14	6772.83	15-Oct-14	6466.81
16-Jan-14	5935.26	16-Apr-14	6680.71	16-Jul-14	6788.42	16-Oct-14	6485.28
17-Jan-14	5930.29	17-Apr-14	6648.46	17-Jul-14	6774.82	17-Oct-14	6504.55
18-Jan-14	5932.11	18-Apr-14	6632.50	18-Jul-14	6756.60	18-Oct-14	6523.04
19-Jan-14	5939.76	19-Apr-14	6630.26	19-Jul-14	6732.41	19-Oct-14	6538.60
20-Jan-14	5950.45	20-Apr-14	6633.88	20-Jul-14	6705.36	20-Oct-14	6545.48
21-Jan-14	5961.89	21-Apr-14	6633.99	21-Jul-14	6679.53	21-Oct-14	6538.61
22-Jan-14	6008.67	22-Apr-14	6621.11	22-Jul-14	6659.09	22-Oct-14	6530.20
23-Jan-14	6014.59	23-Apr-14	6671.85	23-Jul-14	6638.64	23-Oct-14	6503.73
24-Jan-14	6008.84	24-Apr-14	6613.92	24-Jul-14	6640.62	24-Oct-14	6475.55
25-Jan-14	5995.54	25-Apr-14	6541.56	25-Jul-14	6649.20	25-Oct-14	6449.35
26-Jan-14	5979.08	26-Apr-14	6473.11	26-Jul-14	6660.46	26-Oct-14	6427.88
27-Jan-14	5963.30	27-Apr-14	6417.94	27-Jul-14	6670.28	27-Oct-14	6411.33
28-Jan-14	5949.80	28-Apr-14	6377.19	28-Jul-14	6675.45	28-Oct-14	6401.02
29-Jan-14	5817.23	29-Apr-14	6345.05	29-Jul-14	6673.80	29-Oct-14	6402.93
30-Jan-14	5815.76	30-Apr-14	6303.36	30-Jul-14	6655.38	30-Oct-14	6421.47
31-Jan-14	5819.34	1-May-14	6386.95	31-Jul-14	6650.48	31-Oct-14	6454.38
1-Feb-14	5950.12	2-May-14	6372.43	1-Aug-14	6663.04	1-Nov-14	6298.94
2-Feb-14	5960.49	3-May-14	6356.09	2-Aug-14	6656.36	2-Nov-14	6338.29
3-Feb-14	5968.83	4-May-14	6340.09	3-Aug-14	6651.24	3-Nov-14	6364.80

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
4-Feb-14	5972.88	5-May-14	6324.96	4-Aug-14	6647.70	4-Nov-14	6376.78
5-Feb-14	5985.03	6-May-14	6310.99	5-Aug-14	6644.61	5-Nov-14	6544.23
6-Feb-14	5979.72	7-May-14	6283.72	6-Aug-14	6625.97	6-Nov-14	6515.30
7-Feb-14	5966.33	8-May-14	6276.42	7-Aug-14	6629.64	7-Nov-14	6481.64
8-Feb-14	5949.71	9-May-14	6273.89	8-Aug-14	6632.98	8-Nov-14	6447.76
9-Feb-14	5935.67	10-May-14	6281.92	9-Aug-14	6634.55	9-Nov-14	6416.47
10-Feb-14	5924.05	11-May-14	6304.22	10-Aug-14	6634.76	10-Nov-14	6388.69
11-Feb-14	5915.51	12-May-14	6338.61	11-Aug-14	6636.53	11-Nov-14	6362.39
12-Feb-14	5926.30	13-May-14	6377.66	12-Aug-14	6643.20	12-Nov-14	6351.87
13-Feb-14	5935.34	14-May-14	6380.27	13-Aug-14	6637.15	13-Nov-14	6342.25
14-Feb-14	5939.61	15-May-14	6421.49	14-Aug-14	6648.57	14-Nov-14	6330.37
15-Feb-14	5936.50	16-May-14	6459.79	15-Aug-14	6666.95	15-Nov-14	6316.91
16-Feb-14	5927.76	17-May-14	6488.59	16-Aug-14	6688.78	16-Nov-14	6304.19
17-Feb-14	5915.07	18-May-14	6504.72	17-Aug-14	6711.07	17-Nov-14	6293.66
18-Feb-14	5898.56	19-May-14	6512.18	18-Aug-14	6731.43	18-Nov-14	6284.67
19-Feb-14	5830.47	20-May-14	6522.51	19-Aug-14	6747.28	19-Nov-14	6326.73
20-Feb-14	5824.79	21-May-14	6489.40	20-Aug-14	6747.01	20-Nov-14	6302.40
21-Feb-14	5829.28	22-May-14	6515.51	21-Aug-14	6752.12	21-Nov-14	6270.66
22-Feb-14	5851.52	23-May-14	6542.42	22-Aug-14	6748.59	22-Nov-14	6233.84
23-Feb-14	5895.04	24-May-14	6571.95	23-Aug-14	6741.99	23-Nov-14	6195.99
24-Feb-14	5958.01	25-May-14	6599.63	24-Aug-14	6735.56	24-Nov-14	6161.61
25-Feb-14	6037.00	26-May-14	6619.59	25-Aug-14	6731.58	25-Nov-14	6133.97
26-Feb-14	5887.44	27-May-14	6631.12	26-Aug-14	6731.44	26-Nov-14	6151.54
27-Feb-14	5949.56	28-May-14	6623.94	27-Aug-14	6727.01	27-Nov-14	6127.69
28-Feb-14	6007.99	29-May-14	6640.39	28-Aug-14	6729.43	28-Nov-14	6104.73
1-Mar-14	6269.42	30-May-14	6654.56	29-Aug-14	6736.01	29-Nov-14	6084.42
2-Mar-14	6331.69	31-May-14	6661.02	30-Aug-14	6751.03	30-Nov-14	6068.90
3-Mar-14	6381.84	1-Jun-14	6709.90	31-Aug-14	6772.98	1-Dec-14	5865.31
4-Mar-14	6409.11	2-Jun-14	6701.00	1-Sep-14	6760.73	2-Dec-14	5877.20
5-Mar-14	6395.30	3-Jun-14	6687.62	2-Sep-14	6794.60	3-Dec-14	6130.93
6-Mar-14	6400.67	4-Jun-14	6578.90	3-Sep-14	6789.36	4-Dec-14	6159.92
7-Mar-14	6399.36	5-Jun-14	6568.89	4-Sep-14	6802.67	5-Dec-14	6171.81
8-Mar-14	6402.27	6-Jun-14	6574.59	5-Sep-14	6807.84	6-Dec-14	6163.96
9-Mar-14	6410.13	7-Jun-14	6600.29	6-Sep-14	6807.49	7-Dec-14	6137.00
10-Mar-14	6417.03	8-Jun-14	6646.36	7-Sep-14	6803.31	8-Dec-14	6097.85
11-Mar-14	6413.10	9-Jun-14	6710.25	8-Sep-14	6791.52	9-Dec-14	6057.99
12-Mar-14	6357.44	10-Jun-14	6785.78	9-Sep-14	6766.93	10-Dec-14	6093.01
13-Mar-14	6336.83	11-Jun-14	6802.38	10-Sep-14	6748.33	11-Dec-14	6050.96
14-Mar-14	6327.13	12-Jun-14	6831.63	11-Sep-14	6707.49	12-Dec-14	6010.84
15-Mar-14	6331.11	13-Jun-14	6836.70	12-Sep-14	6661.42	13-Dec-14	5972.02
16-Mar-14	6338.72	14-Jun-14	6817.19	13-Sep-14	6619.83	14-Dec-14	5936.82
17-Mar-14	6338.35	15-Jun-14	6780.49	14-Sep-14	6590.88	15-Dec-14	5908.88
18-Mar-14	6332.48	16-Jun-14	6734.95	15-Sep-14	6577.45	16-Dec-14	5895.13
19-Mar-14	6339.66	17-Jun-14	6687.42	16-Sep-14	6580.04	17-Dec-14	5885.93
20-Mar-14	6342.26	18-Jun-14	6626.68	17-Sep-14	6623.44	18-Dec-14	5883.40

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
21-Mar-14	6342.27	19-Jun-14	6604.85	18-Sep-14	6646.70	19-Dec-14	5897.42
22-Mar-14	6340.74	20-Jun-14	6598.16	19-Sep-14	6658.24	20-Dec-14	5920.49
23-Mar-14	6339.20	21-Jun-14	6605.21	20-Sep-14	6658.07	21-Dec-14	5942.96
24-Mar-14	6340.48	22-Jun-14	6623.07	21-Sep-14	6652.15	22-Dec-14	5959.33
25-Mar-14	6344.13	23-Jun-14	6646.99	22-Sep-14	6647.22	23-Dec-14	5965.87
26-Mar-14	6359.10	24-Jun-14	6671.48	23-Sep-14	6649.63	24-Dec-14	6011.90
27-Mar-14	6359.11	25-Jun-14	6726.15	24-Sep-14	6724.82	25-Dec-14	6014.65
28-Mar-14	6365.52	26-Jun-14	6744.60	25-Sep-14	6721.29	26-Dec-14	6025.99
29-Mar-14	6377.72	27-Jun-14	6766.21	26-Sep-14	6719.26	27-Dec-14	6049.21
30-Mar-14	6402.21	28-Jun-14	6778.31	27-Sep-14	6717.74	28-Dec-14	6076.79
31-Mar-14	6438.78	29-Jun-14	6771.60	28-Sep-14	6711.66	29-Dec-14	6099.21
		30-Jun-14	6746.01	29-Sep-14	6695.97	30-Dec-14	6103.05
				30-Sep-14	6668.11	31-Dec-14	6082.08

Table B3: Forecasted daily peak load of BPS of year 2015

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
1-Jan-15	6329.21	1-Apr-15	7080.78	1-Jul-15	7208.06	1-Oct-15	6900.52
2-Jan-15	6341.61	2-Apr-15	6919.10	2-Jul-15	7164.34	2-Oct-15	6833.06
3-Jan-15	6360.73	3-Apr-15	6962.57	3-Jul-15	7135.16	3-Oct-15	6760.75
4-Jan-15	6384.38	4-Apr-15	6990.40	4-Jul-15	7118.87	4-Oct-15	6694.32
5-Jan-15	6409.08	5-Apr-15	7005.42	5-Jul-15	7113.72	5-Oct-15	6644.99
6-Jan-15	6427.69	6-Apr-15	7016.66	6-Jul-15	7116.97	6-Oct-15	6615.99
7-Jan-15	6433.82	7-Apr-15	7024.71	7-Jul-15	7124.96	7-Oct-15	6607.28
8-Jan-15	6424.47	8-Apr-15	7031.30	8-Jul-15	7133.43	8-Oct-15	6783.64
9-Jan-15	6415.13	9-Apr-15	7070.96	9-Jul-15	7085.76	9-Oct-15	6804.14
10-Jan-15	6398.80	10-Apr-15	7069.04	10-Jul-15	7114.59	10-Oct-15	6831.44
11-Jan-15	6377.80	11-Apr-15	7074.81	11-Jul-15	7143.37	11-Oct-15	6863.82
12-Jan-15	6357.46	12-Apr-15	7092.91	12-Jul-15	7171.12	12-Oct-15	6899.88
13-Jan-15	6340.36	13-Apr-15	7108.94	13-Jul-15	7196.14	13-Oct-15	6933.82
14-Jan-15	6326.33	14-Apr-15	7110.74	14-Jul-15	7215.06	14-Oct-15	6963.46
15-Jan-15	6344.33	15-Apr-15	7096.94	15-Jul-15	7226.83	15-Oct-15	6900.11
16-Jan-15	6332.32	16-Apr-15	7129.26	16-Jul-15	7243.61	16-Oct-15	6920.60
17-Jan-15	6327.10	17-Apr-15	7094.84	17-Jul-15	7229.37	17-Oct-15	6941.84
18-Jan-15	6329.19	18-Apr-15	7077.88	18-Jul-15	7210.16	18-Oct-15	6962.10
19-Jan-15	6337.51	19-Apr-15	7075.64	19-Jul-15	7184.53	19-Oct-15	6979.05
20-Jan-15	6349.08	20-Apr-15	7079.68	20-Jul-15	7155.77	20-Oct-15	6986.53
21-Jan-15	6361.41	21-Apr-15	7079.97	21-Jul-15	7128.25	21-Oct-15	6979.11
22-Jan-15	6411.42	22-Apr-15	7066.35	22-Jul-15	7106.43	22-Oct-15	6969.95
23-Jan-15	6417.75	23-Apr-15	7120.76	23-Jul-15	7084.76	23-Oct-15	6941.22
24-Jan-15	6411.58	24-Apr-15	7059.01	24-Jul-15	7086.82	24-Oct-15	6910.57
25-Jan-15	6397.26	25-Apr-15	6981.75	25-Jul-15	7095.93	25-Oct-15	6882.01

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
26-Jan-15	6379.50	26-Apr-15	6908.50	26-Jul-15	7107.89	26-Oct-15	6858.53
27-Jan-15	6362.40	27-Apr-15	6849.25	27-Jul-15	7118.28	27-Oct-15	6840.40
28-Jan-15	6347.71	28-Apr-15	6805.22	28-Jul-15	7123.71	28-Oct-15	6829.11
29-Jan-15	6206.30	29-Apr-15	6770.29	29-Jul-15	7121.84	29-Oct-15	6830.76
30-Jan-15	6204.59	30-Apr-15	6725.90	30-Jul-15	7101.80	30-Oct-15	6850.82
31-Jan-15	6208.32	1-May-15	6814.36	31-Jul-15	7096.37	31-Oct-15	6886.48
1-Feb-15	6347.81	2-May-15	6798.25	1-Aug-15	7109.63	1-Nov-15	6721.31
2-Feb-15	6359.01	3-May-15	6780.26	2-Aug-15	7102.31	2-Nov-15	6764.09
3-Feb-15	6368.18	4-May-15	6762.70	3-Aug-15	7096.68	3-Nov-15	6793.10
4-Feb-15	6372.88	5-May-15	6746.10	4-Aug-15	7092.76	4-Nov-15	6806.41
5-Feb-15	6385.93	6-May-15	6730.79	5-Aug-15	7089.32	5-Nov-15	6985.00
6-Feb-15	6380.42	7-May-15	6701.28	6-Aug-15	7069.54	6-Nov-15	6954.22
7-Feb-15	6366.28	8-May-15	6693.42	7-Aug-15	7073.38	7-Nov-15	6918.25
8-Feb-15	6348.62	9-May-15	6690.76	8-Aug-15	7076.88	8-Nov-15	6881.93
9-Feb-15	6333.57	10-May-15	6699.46	9-Aug-15	7078.49	9-Nov-15	6848.26
10-Feb-15	6320.97	11-May-15	6723.49	10-Aug-15	7078.63	10-Nov-15	6818.29
11-Feb-15	6311.49	12-May-15	6760.49	11-Aug-15	7080.39	11-Nov-15	6789.92
12-Feb-15	6323.17	13-May-15	6802.52	12-Aug-15	7087.38	12-Nov-15	6778.52
13-Feb-15	6332.34	14-May-15	6805.48	13-Aug-15	7080.95	13-Nov-15	6768.09
14-Feb-15	6336.31	15-May-15	6850.00	14-Aug-15	7093.06	14-Nov-15	6755.25
15-Feb-15	6332.31	16-May-15	6891.41	15-Aug-15	7112.59	15-Nov-15	6740.68
16-Feb-15	6322.26	17-May-15	6922.65	16-Aug-15	7135.82	16-Nov-15	6726.88
17-Feb-15	6308.03	18-May-15	6940.35	17-Aug-15	7159.54	17-Nov-15	6715.39
18-Feb-15	6289.80	19-May-15	6948.76	18-Aug-15	7181.23	18-Nov-15	6705.54
19-Feb-15	6216.51	20-May-15	6960.14	19-Aug-15	7198.09	19-Nov-15	6750.84
20-Feb-15	6210.23	21-May-15	6924.36	20-Aug-15	7198.14	20-Nov-15	6724.73
21-Feb-15	6214.99	22-May-15	6952.27	21-Aug-15	7203.70	21-Nov-15	6690.75
22-Feb-15	6238.92	23-May-15	6981.02	22-Aug-15	7199.94	22-Nov-15	6651.38
23-Feb-15	6285.78	24-May-15	7012.55	23-Aug-15	7192.87	23-Nov-15	6610.94
24-Feb-15	6353.60	25-May-15	7042.08	24-Aug-15	7185.97	24-Nov-15	6574.24
25-Feb-15	6438.70	26-May-15	7063.37	25-Aug-15	7181.71	25-Nov-15	6544.77
26-Feb-15	6279.56	27-May-15	7075.63	26-Aug-15	7181.60	26-Nov-15	6564.07
27-Feb-15	6346.61	28-May-15	7067.90	27-Aug-15	7177.07	27-Nov-15	6538.81
28-Feb-15	6409.76	29-May-15	7085.63	28-Aug-15	7179.98	28-Nov-15	6514.58
1-Mar-15	6689.84	30-May-15	7100.85	29-Aug-15	7187.38	29-Nov-15	6493.24
2-Mar-15	6757.30	31-May-15	7107.80	30-Aug-15	7203.85	30-Nov-15	6477.06
3-Mar-15	6811.73	1-Jun-15	7159.96	31-Aug-15	7227.73	1-Dec-15	6260.35
4-Mar-15	6841.63	2-Jun-15	7150.55	1-Sep-15	7215.37	2-Dec-15	6273.42
5-Mar-15	6827.32	3-Jun-15	7136.38	2-Sep-15	7252.09	3-Dec-15	6544.88
6-Mar-15	6833.52	4-Jun-15	7020.01	3-Sep-15	7246.30	4-Dec-15	6575.62
7-Mar-15	6832.40	5-Jun-15	7009.32	4-Sep-15	7260.78	5-Dec-15	6588.03
8-Mar-15	6835.54	6-Jun-15	7015.47	5-Sep-15	7266.42	6-Dec-15	6579.24
9-Mar-15	6843.76	7-Jun-15	7043.10	6-Sep-15	7266.01	7-Dec-15	6549.92
10-Mar-15	6850.78	8-Jun-15	7092.60	7-Sep-15	7261.34	8-Dec-15	6507.45
11-Mar-15	6846.15	9-Jun-15	7161.19	8-Sep-15	7248.40	9-Dec-15	6464.11

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
12-Mar-15	6785.95	10-Jun-15	7242.25	9-Sep-15	7221.64	10-Dec-15	6502.16
13-Mar-15	6763.28	11-Jun-15	7260.12	10-Sep-15	7201.07	11-Dec-15	6456.49
14-Mar-15	6752.31	12-Jun-15	7291.54	11-Sep-15	7156.98	12-Dec-15	6412.87
15-Mar-15	6756.05	13-Jun-15	7297.07	12-Sep-15	7107.30	13-Dec-15	6370.64
16-Mar-15	6763.81	14-Jun-15	7276.24	13-Sep-15	7062.42	14-Dec-15	6332.39
17-Mar-15	6763.21	15-Jun-15	7236.95	14-Sep-15	7031.09	15-Dec-15	6302.02
18-Mar-15	6756.85	16-Jun-15	7188.13	15-Sep-15	7016.37	16-Dec-15	6287.00
19-Mar-15	6764.71	17-Jun-15	7137.11	16-Sep-15	7018.81	17-Dec-15	6277.32
20-Mar-15	6767.60	18-Jun-15	7071.98	17-Sep-15	7065.32	18-Dec-15	6274.54
21-Mar-15	6767.66	19-Jun-15	7048.47	18-Sep-15	7090.48	19-Dec-15	6289.48
22-Mar-15	6765.99	20-Jun-15	7041.10	19-Sep-15	7103.21	20-Dec-15	6314.12
23-Mar-15	6764.26	21-Jun-15	7048.41	20-Sep-15	7103.53	21-Dec-15	6338.12
24-Mar-15	6765.47	22-Jun-15	7067.27	21-Sep-15	7097.77	22-Dec-15	6355.61
25-Mar-15	6769.19	23-Jun-15	7092.66	22-Sep-15	7093.08	23-Dec-15	6362.61
26-Mar-15	6785.08	24-Jun-15	7118.70	23-Sep-15	7096.20	24-Dec-15	6413.02
27-Mar-15	6784.68	25-Jun-15	7177.42	24-Sep-15	7176.97	25-Dec-15	6415.94
28-Mar-15	6791.33	26-Jun-15	7197.07	25-Sep-15	7173.47	26-Dec-15	6428.05
29-Mar-15	6804.36	27-Jun-15	7220.11	26-Sep-15	7171.46	27-Dec-15	6452.91
30-Mar-15	6830.71	28-Jun-15	7233.00	27-Sep-15	7169.90	28-Dec-15	6482.46
31-Mar-15	6870.10	29-Jun-15	7225.82	28-Sep-15	7163.35	29-Dec-15	6506.45
		30-Jun-15	7198.47	29-Sep-15	7146.44	30-Dec-15	6510.46
				30-Sep-15	7116.48	31-Dec-15	6487.82

Table B4: Forecasted daily peak load of BPS of year 2016

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
1-Jan-16	6745.48	1-Apr-16	7547.92	1-Jul-16	7683.54	1-Oct-16	7356.85
2-Jan-16	6758.79	2-Apr-16	7375.64	2-Jul-16	7636.80	2-Oct-16	7284.45
3-Jan-16	6779.39	3-Apr-16	7422.60	3-Jul-16	7605.46	3-Oct-16	7206.85
4-Jan-16	6804.90	4-Apr-16	7452.74	4-Jul-16	7587.80	4-Oct-16	7135.49
5-Jan-16	6831.53	5-Apr-16	7469.04	5-Jul-16	7581.98	5-Oct-16	7082.36
6-Jan-16	6851.61	6-Apr-16	7481.12	6-Jul-16	7585.14	6-Oct-16	7050.93
7-Jan-16	6858.29	7-Apr-16	7489.65	7-Jul-16	7593.40	7-Oct-16	7041.21
8-Jan-16	6848.22	8-Apr-16	7496.47	8-Jul-16	7602.27	8-Oct-16	7228.46
9-Jan-16	6838.26	9-Apr-16	7539.28	9-Jul-16	7551.40	9-Oct-16	7250.32
10-Jan-16	6820.77	10-Apr-16	7536.90	10-Jul-16	7582.24	10-Oct-16	7279.62
11-Jan-16	6798.23	11-Apr-16	7542.61	11-Jul-16	7613.11	11-Oct-16	7314.51
12-Jan-16	6776.35	12-Apr-16	7561.42	12-Jul-16	7642.97	12-Oct-16	7353.49
13-Jan-16	6757.93	13-Apr-16	7578.05	13-Jul-16	7669.97	13-Oct-16	7390.34
14-Jan-16	6742.83	14-Apr-16	7579.67	14-Jul-16	7690.52	14-Oct-16	7422.68
15-Jan-16	6762.29	15-Apr-16	7564.83	15-Jul-16	7703.45	15-Oct-16	7355.27
16-Jan-16	6749.50	16-Apr-16	7599.72	16-Jul-16	7721.46	16-Oct-16	7377.87

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
17-Jan-16	6744.04	17-Apr-16	7563.10	17-Jul-16	7706.61	17-Oct-16	7401.17
18-Jan-16	6746.42	18-Apr-16	7545.16	18-Jul-16	7686.41	18-Oct-16	7423.27
19-Jan-16	6755.46	19-Apr-16	7542.98	19-Jul-16	7659.33	19-Oct-16	7441.64
20-Jan-16	6767.93	20-Apr-16	7547.51	20-Jul-16	7628.86	20-Oct-16	7449.71
21-Jan-16	6781.18	21-Apr-16	7548.04	21-Jul-16	7599.63	21-Oct-16	7441.72
22-Jan-16	6834.49	22-Apr-16	7533.73	22-Jul-16	7576.40	22-Oct-16	7431.77
23-Jan-16	6841.27	23-Apr-16	7591.88	23-Jul-16	7553.52	23-Oct-16	7400.65
24-Jan-16	6834.64	24-Apr-16	7526.29	24-Jul-16	7555.69	24-Oct-16	7367.41
25-Jan-16	6819.28	25-Apr-16	7444.06	25-Jul-16	7565.34	25-Oct-16	7336.36
26-Jan-16	6800.18	26-Apr-16	7365.93	26-Jul-16	7578.01	26-Oct-16	7310.74
27-Jan-16	6781.72	27-Apr-16	7302.53	27-Jul-16	7589.01	27-Oct-16	7290.92
28-Jan-16	6765.79	28-Apr-16	7255.17	28-Jul-16	7594.70	28-Oct-16	7278.58
29-Jan-16	6615.14	29-Apr-16	7217.35	29-Jul-16	7592.60	29-Oct-16	7279.89
30-Jan-16	6613.19	30-Apr-16	7170.00	30-Jul-16	7570.87	30-Oct-16	7301.52
31-Jan-16	6617.08	1-May-16	7263.59	31-Jul-16	7564.88	31-Oct-16	7340.02
1-Feb-16	6765.70	2-May-16	7245.83	1-Aug-16	7578.90	1-Nov-16	7164.58
2-Feb-16	6777.78	3-May-16	7226.12	2-Aug-16	7570.91	2-Nov-16	7210.92
3-Feb-16	6787.84	4-May-16	7206.92	3-Aug-16	7564.76	3-Nov-16	7242.53
4-Feb-16	6793.26	5-May-16	7188.79	4-Aug-16	7560.43	4-Nov-16	7257.25
5-Feb-16	6807.25	6-May-16	7172.10	5-Aug-16	7556.62	5-Nov-16	7447.57
6-Feb-16	6801.58	7-May-16	7140.29	6-Aug-16	7535.68	6-Nov-16	7414.90
7-Feb-16	6786.71	8-May-16	7131.85	7-Aug-16	7539.69	7-Nov-16	7376.57
8-Feb-16	6768.02	9-May-16	7129.05	8-Aug-16	7543.33	8-Nov-16	7337.70
9-Feb-16	6751.97	10-May-16	7138.45	9-Aug-16	7544.95	9-Nov-16	7301.57
10-Feb-16	6738.35	11-May-16	7164.26	10-Aug-16	7544.99	10-Nov-16	7269.32
11-Feb-16	6727.91	12-May-16	7203.95	11-Aug-16	7546.74	11-Nov-16	7238.81
12-Feb-16	6740.52	13-May-16	7249.05	12-Aug-16	7554.01	12-Nov-16	7226.46
13-Feb-16	6749.78	14-May-16	7252.38	13-Aug-16	7547.18	13-Nov-16	7215.19
14-Feb-16	6753.36	15-May-16	7300.32	14-Aug-16	7559.97	14-Nov-16	7201.34
15-Feb-16	6748.39	16-May-16	7344.93	15-Aug-16	7580.66	15-Nov-16	7185.63
16-Feb-16	6736.94	17-May-16	7378.70	16-Aug-16	7605.28	16-Nov-16	7170.70
17-Feb-16	6721.05	18-May-16	7398.03	17-Aug-16	7630.45	17-Nov-16	7158.21
18-Feb-16	6700.99	19-May-16	7407.44	18-Aug-16	7653.46	18-Nov-16	7147.48
19-Feb-16	6622.38	20-May-16	7419.93	19-Aug-16	7671.34	19-Nov-16	7196.07
20-Feb-16	6615.44	21-May-16	7381.43	20-Aug-16	7671.78	20-Nov-16	7168.13
21-Feb-16	6620.48	22-May-16	7411.16	21-Aug-16	7677.78	21-Nov-16	7131.87
22-Feb-16	6646.14	23-May-16	7441.78	22-Aug-16	7673.78	22-Nov-16	7089.90
23-Feb-16	6696.43	24-May-16	7475.33	23-Aug-16	7666.21	23-Nov-16	7046.82
24-Feb-16	6769.25	25-May-16	7506.74	24-Aug-16	7658.82	24-Nov-16	7007.75
25-Feb-16	6860.65	26-May-16	7529.38	25-Aug-16	7654.26	25-Nov-16	6976.43
26-Feb-16	6691.51	27-May-16	7542.37	26-Aug-16	7654.16	26-Nov-16	6997.52
27-Feb-16	6763.64	28-May-16	7534.08	27-Aug-16	7649.55	27-Nov-16	6970.86
28-Feb-16	6831.71	29-May-16	7553.13	28-Aug-16	7652.97	28-Nov-16	6945.36
29-Feb-16	6932.87	30-May-16	7569.43	29-Aug-16	7661.26	29-Nov-16	6923.00
1-Mar-16	7131.22	31-May-16	7576.90	30-Aug-16	7679.24	30-Nov-16	6906.19

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
2-Mar-16	7204.07	1-Jun-16	7632.53	31-Aug-16	7705.15	1-Dec-16	6675.75
3-Mar-16	7262.96	2-Jun-16	7622.61	1-Sep-16	7692.63	2-Dec-16	6690.06
4-Mar-16	7295.62	3-Jun-16	7607.66	2-Sep-16	7732.33	3-Dec-16	6980.05
5-Mar-16	7280.86	4-Jun-16	7483.36	3-Sep-16	7725.94	4-Dec-16	7012.56
6-Mar-16	7287.96	5-Jun-16	7471.95	4-Sep-16	7741.65	5-Dec-16	7025.44
7-Mar-16	7287.06	6-Jun-16	7478.58	5-Sep-16	7747.78	6-Dec-16	7015.65
8-Mar-16	7290.45	7-Jun-16	7508.19	6-Sep-16	7747.31	7-Dec-16	6983.84
9-Mar-16	7299.02	8-Jun-16	7561.21	7-Sep-16	7742.12	8-Dec-16	6937.92
10-Mar-16	7306.15	9-Jun-16	7634.64	8-Sep-16	7727.95	9-Dec-16	6890.94
11-Mar-16	7300.77	10-Jun-16	7721.39	9-Sep-16	7698.94	10-Dec-16	6932.13
12-Mar-16	7235.89	11-Jun-16	7740.59	10-Sep-16	7676.37	11-Dec-16	6882.68
13-Mar-16	7211.07	12-Jun-16	7774.25	11-Sep-16	7628.91	12-Dec-16	6835.37
14-Mar-16	7198.76	13-Jun-16	7780.29	12-Sep-16	7575.49	13-Dec-16	6789.57
15-Mar-16	7202.22	14-Jun-16	7758.12	13-Sep-16	7527.22	14-Dec-16	6748.10
16-Mar-16	7210.13	15-Jun-16	7716.18	14-Sep-16	7493.40	15-Dec-16	6715.19
17-Mar-16	7209.31	16-Jun-16	7663.98	15-Sep-16	7477.33	16-Dec-16	6698.82
18-Mar-16	7202.46	17-Jun-16	7609.37	16-Sep-16	7479.60	17-Dec-16	6688.68
19-Mar-16	7211.06	18-Jun-16	7539.75	17-Sep-16	7529.26	18-Dec-16	6685.62
20-Mar-16	7214.28	19-Jun-16	7514.51	18-Sep-16	7556.38	19-Dec-16	6701.50
21-Mar-16	7214.39	20-Jun-16	7506.43	19-Sep-16	7570.38	20-Dec-16	6727.72
22-Mar-16	7212.61	21-Jun-16	7513.96	20-Sep-16	7571.25	21-Dec-16	6753.28
23-Mar-16	7210.68	22-Jun-16	7533.84	21-Sep-16	7565.70	22-Dec-16	6771.91
24-Mar-16	7211.81	23-Jun-16	7560.70	22-Sep-16	7561.32	23-Dec-16	6779.36
25-Mar-16	7215.59	24-Jun-16	7588.33	23-Sep-16	7565.21	24-Dec-16	6834.38
26-Mar-16	7232.38	25-Jun-16	7651.20	24-Sep-16	7651.69	25-Dec-16	6837.46
27-Mar-16	7231.54	26-Jun-16	7672.07	25-Sep-16	7648.24	26-Dec-16	6850.35
28-Mar-16	7238.40	27-Jun-16	7696.56	26-Sep-16	7646.28	27-Dec-16	6876.89
29-Mar-16	7252.30	28-Jun-16	7710.26	27-Sep-16	7644.68	28-Dec-16	6908.45
30-Mar-16	7280.56	29-Jun-16	7702.62	28-Sep-16	7637.65	29-Dec-16	6934.05
31-Mar-16	7322.878	30-Jun-16	7673.48	29-Sep-16	7619.48	30-Dec-16	6938.25
				30-Sep-16	7587.35	31-Dec-16	6913.89

Table B5: Forecasted daily peak load of BPS of year 2017

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
1-Jan-17	7181.75	1-Apr-17	8037.13	1-Jul-17	8181.67	1-Oct-17	7835.14
2-Jan-17	7195.98	2-Apr-17	7853.79	2-Jul-17	8131.85	2-Oct-17	7757.65
3-Jan-17	7218.11	3-Apr-17	7904.39	3-Jul-17	8098.28	3-Oct-17	7674.57
4-Jan-17	7245.54	4-Apr-17	7936.92	4-Jul-17	8079.19	4-Oct-17	7598.12
5-Jan-17	7274.16	5-Apr-17	7954.56	5-Jul-17	8072.67	5-Oct-17	7541.04
6-Jan-17	7295.77	6-Apr-17	7967.51	6-Jul-17	8075.71	6-Oct-17	7507.07
7-Jan-17	7303.03	7-Apr-17	7976.51	7-Jul-17	8084.23	7-Oct-17	7496.26

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
8-Jan-17	7292.22	8-Apr-17	7983.57	8-Jul-17	8093.48	8-Oct-17	7694.75
9-Jan-17	7281.65	9-Apr-17	8029.62	9-Jul-17	8039.26	9-Oct-17	7717.99
10-Jan-17	7262.97	10-Apr-17	8026.74	10-Jul-17	8072.16	10-Oct-17	7749.33
11-Jan-17	7238.85	11-Apr-17	8032.36	11-Jul-17	8105.18	11-Oct-17	7786.81
12-Jan-17	7215.39	12-Apr-17	8051.84	12-Jul-17	8137.23	12-Oct-17	7828.80
13-Jan-17	7195.61	13-Apr-17	8069.06	13-Jul-17	8166.30	13-Oct-17	7868.66
14-Jan-17	7179.41	14-Apr-17	8070.45	14-Jul-17	8188.54	14-Oct-17	7903.81
15-Jan-17	7200.37	15-Apr-17	8054.56	15-Jul-17	8202.71	15-Oct-17	7832.28
16-Jan-17	7186.79	16-Apr-17	8092.09	16-Jul-17	8221.95	16-Oct-17	7857.09
17-Jan-17	7181.10	17-Apr-17	8053.24	17-Jul-17	8206.51	17-Oct-17	7882.54
18-Jan-17	7183.80	18-Apr-17	8034.35	18-Jul-17	8185.35	18-Oct-17	7906.54
19-Jan-17	7193.59	19-Apr-17	8032.27	19-Jul-17	8156.82	19-Oct-17	7926.37
20-Jan-17	7207.01	20-Apr-17	8037.35	20-Jul-17	8124.62	20-Oct-17	7935.04
21-Jan-17	7221.21	21-Apr-17	8038.20	21-Jul-17	8093.67	21-Oct-17	7926.43
22-Jan-17	7277.88	22-Apr-17	8023.23	22-Jul-17	8069.02	22-Oct-17	7915.65
23-Jan-17	7285.12	23-Apr-17	8085.21	23-Jul-17	8044.94	23-Oct-17	7882.02
24-Jan-17	7278.05	24-Apr-17	8015.75	24-Jul-17	8047.21	24-Oct-17	7846.05
25-Jan-17	7261.61	25-Apr-17	7928.50	25-Jul-17	8057.42	25-Oct-17	7812.38
26-Jan-17	7241.13	26-Apr-17	7845.43	26-Jul-17	8070.82	26-Oct-17	7784.50
27-Jan-17	7221.27	27-Apr-17	7777.80	27-Jul-17	8082.44	27-Oct-17	7762.90
28-Jan-17	7204.06	28-Apr-17	7727.01	28-Jul-17	8088.42	28-Oct-17	7749.45
29-Jan-17	7043.76	29-Apr-17	7686.24	29-Jul-17	8086.09	29-Oct-17	7750.33
30-Jan-17	7041.55	30-Apr-17	7635.66	30-Jul-17	8062.59	30-Oct-17	7773.56
31-Jan-17	7045.61	1-May-17	7734.63	31-Jul-17	8056.03	31-Oct-17	7814.99
1-Feb-17	7203.79	2-May-17	7715.14	1-Aug-17	8070.85	1-Nov-17	7628.74
2-Feb-17	7216.79	3-May-17	7693.66	2-Aug-17	8062.17	2-Nov-17	7678.77
3-Feb-17	7227.80	4-May-17	7672.76	3-Aug-17	8055.47	3-Nov-17	7713.10
4-Feb-17	7234.02	5-May-17	7653.06	4-Aug-17	8050.73	4-Nov-17	7729.28
5-Feb-17	7248.98	6-May-17	7634.92	5-Aug-17	8046.53	5-Nov-17	7931.95
6-Feb-17	7243.20	7-May-17	7600.74	6-Aug-17	8024.40	6-Nov-17	7897.34
7-Feb-17	7227.62	8-May-17	7591.70	7-Aug-17	8028.55	7-Nov-17	7856.57
8-Feb-17	7207.90	9-May-17	7588.77	8-Aug-17	8032.33	8-Nov-17	7815.09
9-Feb-17	7190.85	10-May-17	7598.88	9-Aug-17	8033.95	9-Nov-17	7776.40
10-Feb-17	7176.20	11-May-17	7626.52	10-Aug-17	8033.87	10-Nov-17	7741.80
11-Feb-17	7164.76	12-May-17	7668.97	11-Aug-17	8035.56	11-Nov-17	7709.06
12-Feb-17	7178.34	13-May-17	7717.23	12-Aug-17	8043.09	12-Nov-17	7695.68
13-Feb-17	7187.65	14-May-17	7720.99	13-Aug-17	8035.84	13-Nov-17	7683.54
14-Feb-17	7190.79	15-May-17	7772.45	14-Aug-17	8049.30	14-Nov-17	7668.66
15-Feb-17	7184.74	16-May-17	7820.36	15-Aug-17	8071.14	15-Nov-17	7651.76
16-Feb-17	7171.79	17-May-17	7856.74	16-Aug-17	8097.18	16-Nov-17	7635.65
17-Feb-17	7154.14	18-May-17	7877.78	17-Aug-17	8123.79	17-Nov-17	7622.13
18-Feb-17	7132.13	19-May-17	7888.24	18-Aug-17	8148.13	18-Nov-17	7610.48
19-Feb-17	7048.08	20-May-17	7901.87	19-Aug-17	8167.03	19-Nov-17	7662.42
20-Feb-17	7040.43	21-May-17	7860.60	20-Aug-17	8167.91	20-Nov-17	7632.62
21-Feb-17	7045.74	22-May-17	7892.18	21-Aug-17	8174.37	21-Nov-17	7594.02

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
22-Feb-17	7073.18	23-May-17	7924.69	22-Aug-17	8170.11	22-Nov-17	7549.40
23-Feb-17	7127.00	24-May-17	7960.30	23-Aug-17	8162.01	23-Nov-17	7503.62
24-Feb-17	7204.96	25-May-17	7993.63	24-Aug-17	8154.10	24-Nov-17	7462.14
25-Feb-17	7302.86	26-May-17	8017.63	25-Aug-17	8149.23	25-Nov-17	7428.94
26-Feb-17	7123.28	27-May-17	8031.34	26-Aug-17	8149.14	26-Nov-17	7451.91
27-Feb-17	7200.66	28-May-17	8022.48	27-Aug-17	8144.45	27-Nov-17	7423.83
28-Feb-17	7273.81	29-May-17	8042.89	28-Aug-17	8148.43	28-Nov-17	7397.06
1-Mar-17	7593.56	30-May-17	8060.31	29-Aug-17	8157.64	29-Nov-17	7373.70
2-Mar-17	7672.00	31-May-17	8068.32	30-Aug-17	8177.21	30-Nov-17	7356.29
3-Mar-17	7735.51	1-Jun-17	8127.60	31-Aug-17	8205.22	1-Dec-17	7111.52
4-Mar-17	7771.06	2-Jun-17	8117.18	1-Sep-17	8192.51	2-Dec-17	7127.12
5-Mar-17	7755.93	3-Jun-17	8101.45	2-Sep-17	8235.30	3-Dec-17	7436.43
6-Mar-17	7764.00	4-Jun-17	7968.94	3-Sep-17	8228.29	4-Dec-17	7470.73
7-Mar-17	7763.34	5-Jun-17	7956.80	4-Sep-17	8245.27	5-Dec-17	7484.06
8-Mar-17	7766.99	6-Jun-17	7963.90	5-Sep-17	8251.93	6-Dec-17	7473.18
9-Mar-17	7775.91	7-Jun-17	7995.56	6-Sep-17	8251.39	7-Dec-17	7438.78
10-Mar-17	7783.13	8-Jun-17	8052.19	7-Sep-17	8245.64	8-Dec-17	7389.24
11-Mar-17	7776.96	9-Jun-17	8130.60	8-Sep-17	8230.19	9-Dec-17	7338.47
12-Mar-17	7707.24	10-Jun-17	8223.19	9-Sep-17	8198.83	10-Dec-17	7382.92
13-Mar-17	7680.18	11-Jun-17	8243.80	10-Sep-17	8174.24	11-Dec-17	7329.50
14-Mar-17	7666.47	12-Jun-17	8279.78	11-Sep-17	8123.28	12-Dec-17	7278.33
15-Mar-17	7669.63	13-Jun-17	8286.34	12-Sep-17	8066.01	13-Dec-17	7228.81
16-Mar-17	7677.67	14-Jun-17	8262.81	13-Sep-17	8014.22	14-Dec-17	7183.97
17-Mar-17	7676.64	15-Jun-17	8218.16	14-Sep-17	7977.82	15-Dec-17	7148.39
18-Mar-17	7669.31	16-Jun-17	8162.50	15-Sep-17	7960.33	16-Dec-17	7130.59
19-Mar-17	7678.70	17-Jun-17	8104.21	16-Sep-17	7962.39	17-Dec-17	7120.01
20-Mar-17	7682.28	18-Jun-17	8029.99	17-Sep-17	8015.25	18-Dec-17	7116.64
21-Mar-17	7682.48	19-Jun-17	8002.97	18-Sep-17	8044.40	19-Dec-17	7133.47
22-Mar-17	7680.58	20-Jun-17	7994.13	19-Sep-17	8059.73	20-Dec-17	7161.30
23-Mar-17	7678.45	21-Jun-17	8001.89	20-Sep-17	8061.21	21-Dec-17	7188.42
24-Mar-17	7679.51	22-Jun-17	8022.77	21-Sep-17	8055.95	22-Dec-17	7208.20
25-Mar-17	7683.34	23-Jun-17	8051.12	22-Sep-17	8051.94	23-Dec-17	7216.12
26-Mar-17	7701.02	24-Jun-17	8080.36	23-Sep-17	8056.67	24-Dec-17	7275.97
27-Mar-17	7699.68	25-Jun-17	8147.49	24-Sep-17	8148.98	25-Dec-17	7279.21
28-Mar-17	7706.75	26-Jun-17	8169.60	25-Sep-17	8145.62	26-Dec-17	7292.88
29-Mar-17	7721.53	27-Jun-17	8195.58	26-Sep-17	8143.73	27-Dec-17	7321.13
30-Mar-17	7751.77	28-Jun-17	8210.11	27-Sep-17	8142.09	28-Dec-17	7354.77
31-Mar-17	7797.11	29-Jun-17	8201.98	28-Sep-17	8134.56	29-Dec-17	7382.02
		30-Jun-17	8171.01	29-Sep-17	8115.10	30-Dec-17	7386.42
				30-Sep-17	8080.72	31-Dec-17	7360.29

Table B6: Forecasted daily peak load of BPS of year 2018

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
1-Jan-18	7638.03	1-Apr-18	8548.40	1-Jul-18	8702.44	1-Oct-18	8335.40
2-Jan-18	7653.19	2-Apr-18	8353.56	2-Jul-18	8649.47	2-Oct-18	8252.64
3-Jan-18	7676.88	3-Apr-18	8407.92	3-Jul-18	8613.62	3-Oct-18	8163.92
4-Jan-18	7706.29	4-Apr-18	8442.96	4-Jul-18	8593.05	4-Oct-18	8082.20
5-Jan-18	7736.96	5-Apr-18	8461.98	5-Jul-18	8585.78	5-Oct-18	8021.03
6-Jan-18	7760.15	6-Apr-18	8475.83	6-Jul-18	8588.67	6-Oct-18	7984.40
7-Jan-18	7768.04	7-Apr-18	8485.31	7-Jul-18	8597.44	7-Oct-18	7972.44
8-Jan-18	7756.47	8-Apr-18	8492.58	8-Jul-18	8607.08	8-Oct-18	8182.53
9-Jan-18	7745.28	9-Apr-18	8541.99	9-Jul-18	8549.33	9-Oct-18	8207.15
10-Jan-18	7725.40	10-Apr-18	8538.56	10-Jul-18	8584.34	10-Oct-18	8240.58
11-Jan-18	7699.66	11-Apr-18	8544.04	11-Jul-18	8619.59	11-Oct-18	8280.71
12-Jan-18	7674.58	12-Apr-18	8564.17	12-Jul-18	8653.89	12-Oct-18	8325.80
13-Jan-18	7653.40	13-Apr-18	8581.95	13-Jul-18	8685.11	13-Oct-18	8368.78
14-Jan-18	7636.08	14-Apr-18	8583.10	14-Jul-18	8709.12	14-Oct-18	8406.84
15-Jan-18	7658.58	15-Apr-18	8566.11	15-Jul-18	8724.60	15-Oct-18	8331.14
16-Jan-18	7644.20	16-Apr-18	8606.36	16-Jul-18	8745.10	16-Oct-18	8358.26
17-Jan-18	7638.29	17-Apr-18	8565.28	17-Jul-18	8729.09	17-Oct-18	8385.94
18-Jan-18	7641.33	18-Apr-18	8545.45	18-Jul-18	8706.98	18-Oct-18	8411.92
19-Jan-18	7651.90	19-Apr-18	8543.52	19-Jul-18	8677.00	19-Oct-18	8433.24
20-Jan-18	7666.31	20-Apr-18	8549.23	20-Jul-18	8643.06	20-Oct-18	8442.52
21-Jan-18	7681.50	21-Apr-18	8550.44	21-Jul-18	8610.36	21-Oct-18	8433.24
22-Jan-18	7741.61	22-Apr-18	8534.87	22-Jul-18	8584.27	22-Oct-18	8421.58
23-Jan-18	7749.32	23-Apr-18	8600.74	23-Jul-18	8559.00	23-Oct-18	8385.33
24-Jan-18	7741.79	24-Apr-18	8527.41	24-Jul-18	8561.39	24-Oct-18	8346.50
25-Jan-18	7724.26	25-Apr-18	8435.07	25-Jul-18	8572.18	25-Oct-18	8310.07
26-Jan-18	7702.35	26-Apr-18	8346.97	26-Jul-18	8586.34	26-Oct-18	8279.82
27-Jan-18	7681.04	27-Apr-18	8275.05	27-Jul-18	8598.60	27-Oct-18	8256.34
28-Jan-18	7662.51	28-Apr-18	8220.77	28-Jul-18	8604.86	28-Oct-18	8241.70
29-Jan-18	7492.15	29-Apr-18	8176.96	29-Jul-18	8602.31	29-Oct-18	8242.08
30-Jan-18	7489.68	30-Apr-18	8122.89	30-Jul-18	8576.96	30-Oct-18	8266.95
31-Jan-18	7493.91	1-May-18	8227.47	31-Jul-18	8569.79	31-Oct-18	8311.40
1-Feb-18	7662.06	2-May-18	8206.20	1-Aug-18	8585.47	1-Nov-18	8113.80
2-Feb-18	7676.04	3-May-18	8182.88	2-Aug-18	8576.08	2-Nov-18	8167.66
3-Feb-18	7688.07	4-May-18	8160.22	3-Aug-18	8568.82	3-Nov-18	8204.79
4-Feb-18	7695.17	5-May-18	8138.88	4-Aug-18	8563.64	4-Nov-18	8222.51
5-Feb-18	7711.14	6-May-18	8119.24	5-Aug-18	8559.05	5-Nov-18	8438.13
6-Feb-18	7705.27	7-May-18	8082.63	6-Aug-18	8535.69	6-Nov-18	8401.55
7-Feb-18	7689.01	8-May-18	8072.97	7-Aug-18	8539.98	7-Nov-18	8358.28
8-Feb-18	7668.27	9-May-18	8069.90	8-Aug-18	8543.88	8-Nov-18	8314.10
9-Feb-18	7650.21	10-May-18	8080.76	9-Aug-18	8545.48	9-Nov-18	8272.76
10-Feb-18	7634.52	11-May-18	8110.27	10-Aug-18	8545.25	10-Nov-18	8235.72
11-Feb-18	7622.04	12-May-18	8155.57	11-Aug-18	8546.86	11-Nov-18	8200.67
12-Feb-18	7636.64	13-May-18	8207.07	12-Aug-18	8554.62	12-Nov-18	8186.20

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
13-Feb-18	7645.95	14-May-18	8211.29	13-Aug-18	8546.92	13-Nov-18	8173.15
14-Feb-18	7648.58	15-May-18	8266.38	14-Aug-18	8561.04	14-Nov-18	8157.19
15-Feb-18	7641.38	16-May-18	8317.71	15-Aug-18	8584.05	15-Nov-18	8139.07
16-Feb-18	7626.81	17-May-18	8356.78	16-Aug-18	8611.49	16-Nov-18	8121.75
17-Feb-18	7607.29	18-May-18	8379.59	17-Aug-18	8639.56	17-Nov-18	8107.15
18-Feb-18	7583.23	19-May-18	8391.14	18-Aug-18	8665.24	18-Nov-18	8094.54
19-Feb-18	7493.61	20-May-18	8405.97	19-Aug-18	8685.16	19-Nov-18	8149.89
20-Feb-18	7485.21	21-May-18	8361.87	20-Aug-18	8686.54	20-Nov-18	8118.18
21-Feb-18	7490.77	22-May-18	8395.33	21-Aug-18	8693.46	21-Nov-18	8077.20
22-Feb-18	7520.03	23-May-18	8429.76	22-Aug-18	8688.92	22-Nov-18	8029.87
23-Feb-18	7577.48	24-May-18	8467.45	23-Aug-18	8680.27	23-Nov-18	7981.35
24-Feb-18	7660.74	25-May-18	8502.72	24-Aug-18	8671.82	24-Nov-18	7937.42
25-Feb-18	7765.33	26-May-18	8528.11	25-Aug-18	8666.61	25-Nov-18	7902.31
26-Feb-18	7574.86	27-May-18	8542.56	26-Aug-18	8666.52	26-Nov-18	7927.23
27-Feb-18	7657.68	28-May-18	8533.09	27-Aug-18	8661.76	27-Nov-18	7897.72
28-Feb-18	7736.09	29-May-18	8554.90	28-Aug-18	8666.33	28-Nov-18	7869.69
1-Mar-18	8076.86	30-May-18	8573.48	29-Aug-18	8676.54	29-Nov-18	7845.34
2-Mar-18	8161.08	31-May-18	8582.05	30-Aug-18	8697.76	30-Nov-18	7827.34
3-Mar-18	8229.40	1-Jun-18	8645.19	31-Aug-18	8727.96	1-Dec-18	7567.66
4-Mar-18	8267.97	2-Jun-18	8634.26	1-Sep-18	8715.00	2-Dec-18	7584.61
5-Mar-18	8252.53	3-Jun-18	8617.75	2-Sep-18	8761.01	3-Dec-18	7914.04
6-Mar-18	8261.63	4-Jun-18	8476.74	3-Sep-18	8753.34	4-Dec-18	7950.12
7-Mar-18	8261.25	5-Jun-18	8463.85	4-Sep-18	8771.65	5-Dec-18	7963.88
8-Mar-18	8265.17	6-Jun-18	8471.45	5-Sep-18	8778.86	6-Dec-18	7951.84
9-Mar-18	8274.44	7-Jun-18	8505.21	6-Sep-18	8778.23	7-Dec-18	7914.74
10-Mar-18	8281.72	8-Jun-18	8565.56	7-Sep-18	8771.90	8-Dec-18	7861.44
11-Mar-18	8274.71	9-Jun-18	8649.07	8-Sep-18	8755.11	9-Dec-18	7806.69
12-Mar-18	8200.01	10-Jun-18	8747.66	9-Sep-18	8721.30	10-Dec-18	7854.52
13-Mar-18	8170.62	11-Jun-18	8769.74	10-Sep-18	8694.67	11-Dec-18	7796.98
14-Mar-18	8155.44	12-Jun-18	8808.12	11-Sep-18	8640.10	12-Dec-18	7741.77
15-Mar-18	8158.26	13-Jun-18	8815.23	12-Sep-18	8578.84	13-Dec-18	7688.34
16-Mar-18	8166.44	14-Jun-18	8790.33	13-Sep-18	8523.42	14-Dec-18	7639.99
17-Mar-18	8165.20	15-Jun-18	8742.90	14-Sep-18	8484.35	15-Dec-18	7601.62
18-Mar-18	8157.41	16-Jun-18	8683.70	15-Sep-18	8465.37	16-Dec-18	7582.31
19-Mar-18	8167.63	17-Jun-18	8621.62	16-Sep-18	8467.20	17-Dec-18	7571.31
20-Mar-18	8171.60	18-Jun-18	8542.71	17-Sep-18	8523.30	18-Dec-18	7567.61
21-Mar-18	8171.92	19-Jun-18	8513.85	18-Sep-18	8554.55	19-Dec-18	7585.40
22-Mar-18	8169.92	20-Jun-18	8504.22	19-Sep-18	8571.28	20-Dec-18	7614.84
23-Mar-18	8167.59	21-Jun-18	8512.17	20-Sep-18	8573.44	21-Dec-18	7643.57
24-Mar-18	8168.56	22-Jun-18	8534.07	21-Sep-18	8568.52	22-Dec-18	7664.51
25-Mar-18	8172.43	23-Jun-18	8563.93	22-Sep-18	8564.94	23-Dec-18	7672.88
26-Mar-18	8190.98	24-Jun-18	8594.80	23-Sep-18	8570.59	24-Dec-18	7737.81
27-Mar-18	8189.11	25-Jun-18	8666.29	24-Sep-18	8668.83	25-Dec-18	7741.18
28-Mar-18	8196.37	26-Jun-18	8689.67	25-Sep-18	8665.59	26-Dec-18	7755.64
29-Mar-18	8212.05	27-Jun-18	8717.16	26-Sep-18	8663.80	27-Dec-18	7785.64

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
30-Mar-18	8244.34	28-Jun-18	8732.54	27-Sep-18	8662.14	28-Dec-18	7821.40
31-Mar-18	8292.79	29-Jun-18	8723.91	28-Sep-18	8654.09	29-Dec-18	7850.37
		30-Jun-18	8691.08	29-Sep-18	8633.30	30-Dec-18	7854.97
				30-Sep-18	8596.61	31-Dec-18	7827.02

Table B7: Forecasted daily peak load of BPS of year 2019

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
1-Jan-19	8114.32	1-Apr-19	9081.72	1-Jul-19	9245.86	1-Oct-19	8857.61
2-Jan-19	8130.41	2-Apr-19	8874.94	2-Jul-19	9189.67	2-Oct-19	8769.43
3-Jan-19	8155.71	3-Apr-19	8933.21	3-Jul-19	9151.47	3-Oct-19	8674.90
4-Jan-19	8187.15	4-Apr-19	8970.83	4-Jul-19	9129.36	4-Oct-19	8587.73
5-Jan-19	8219.94	5-Apr-19	8991.30	5-Jul-19	9121.30	5-Oct-19	8522.32
6-Jan-19	8244.77	6-Apr-19	9006.08	6-Jul-19	9124.03	6-Oct-19	8482.94
7-Jan-19	8253.31	7-Apr-19	9016.04	7-Jul-19	9133.04	7-Oct-19	8469.73
8-Jan-19	8240.98	8-Apr-19	9023.51	8-Jul-19	9143.06	8-Oct-19	8691.79
9-Jan-19	8229.16	9-Apr-19	9076.38	9-Jul-19	9081.60	9-Oct-19	8717.81
10-Jan-19	8208.06	10-Apr-19	9072.36	10-Jul-19	9118.80	10-Oct-19	8753.36
11-Jan-19	8180.67	11-Apr-19	9077.66	11-Jul-19	9156.34	11-Oct-19	8796.21
12-Jan-19	8153.91	12-Apr-19	9098.41	12-Jul-19	9192.97	12-Oct-19	8844.50
13-Jan-19	8131.30	13-Apr-19	9116.73	13-Jul-19	9226.41	13-Oct-19	8890.69
14-Jan-19	8112.83	14-Apr-19	9117.61	14-Jul-19	9252.27	14-Oct-19	8931.77
15-Jan-19	8136.91	15-Apr-19	9099.50	15-Jul-19	9269.11	15-Oct-19	8851.86
16-Jan-19	8121.72	16-Apr-19	9142.54	16-Jul-19	9290.89	16-Oct-19	8881.38
17-Jan-19	8115.60	17-Apr-19	9099.20	17-Jul-19	9274.35	17-Oct-19	8911.38
18-Jan-19	8119.02	18-Apr-19	9078.46	18-Jul-19	9251.30	18-Oct-19	8939.40
19-Jan-19	8130.40	19-Apr-19	9076.72	19-Jul-19	9219.86	19-Oct-19	8962.26
20-Jan-19	8145.83	20-Apr-19	9083.12	20-Jul-19	9184.17	20-Oct-19	8972.13
21-Jan-19	8162.05	21-Apr-19	9084.77	21-Jul-19	9149.71	21-Oct-19	8962.15
22-Jan-19	8225.66	22-Apr-19	9068.63	22-Jul-19	9122.17	22-Oct-19	8949.58
23-Jan-19	8233.87	23-Apr-19	9138.49	23-Jul-19	9095.72	23-Oct-19	8910.58
24-Jan-19	8225.87	24-Apr-19	9061.25	24-Jul-19	9098.23	24-Oct-19	8868.76
25-Jan-19	8207.21	25-Apr-19	8963.77	25-Jul-19	9109.61	25-Oct-19	8829.45
26-Jan-19	8183.85	26-Apr-19	8870.58	26-Jul-19	9124.56	26-Oct-19	8796.70
27-Jan-19	8161.04	27-Apr-19	8794.27	27-Jul-19	9137.47	27-Oct-19	8771.23
28-Jan-19	8141.13	28-Apr-19	8736.42	28-Jul-19	9144.02	28-Oct-19	8755.33
29-Jan-19	7960.31	29-Apr-19	8689.50	29-Jul-19	9141.25	29-Oct-19	8755.14
30-Jan-19	7957.58	30-Apr-19	8631.67	30-Jul-19	9113.98	30-Oct-19	8781.68
31-Jan-19	7961.98	1-May-19	8742.13	31-Jul-19	9106.19	31-Oct-19	8829.24
1-Feb-19	8140.54	2-May-19	8719.01	1-Aug-19	9122.76	1-Nov-19	8619.76
2-Feb-19	8155.53	3-May-19	8693.78	2-Aug-19	9112.64	2-Nov-19	8677.57
3-Feb-19	8168.65	4-May-19	8669.30	3-Aug-19	9104.79	3-Nov-19	8717.63

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
4-Feb-19	8176.69	5-May-19	8646.26	4-Aug-19	9099.17	4-Nov-19	8736.93
5-Feb-19	8193.72	6-May-19	8625.08	5-Aug-19	9094.17	5-Nov-19	8966.11
6-Feb-19	8187.80	7-May-19	8585.96	6-Aug-19	9069.56	6-Nov-19	8927.52
7-Feb-19	8170.88	8-May-19	8575.67	7-Aug-19	9073.97	7-Nov-19	8881.68
8-Feb-19	8149.13	9-May-19	8572.46	8-Aug-19	9077.97	8-Nov-19	8834.72
9-Feb-19	8130.06	10-May-19	8584.08	9-Aug-19	9079.54	9-Nov-19	8790.65
10-Feb-19	8113.31	11-May-19	8615.52	10-Aug-19	9079.13	10-Nov-19	8751.07
11-Feb-19	8099.75	12-May-19	8663.74	11-Aug-19	9080.64	11-Nov-19	8713.64
12-Feb-19	8115.42	13-May-19	8718.58	12-Aug-19	9088.61	12-Nov-19	8698.01
13-Feb-19	8124.69	14-May-19	8723.30	13-Aug-19	9080.43	13-Nov-19	8684.01
14-Feb-19	8126.74	15-May-19	8782.12	14-Aug-19	9095.21	14-Nov-19	8666.94
15-Feb-19	8118.29	16-May-19	8836.96	15-Aug-19	9119.37	15-Nov-19	8647.55
16-Feb-19	8102.00	17-May-19	8878.82	16-Aug-19	9148.24	16-Nov-19	8628.98
17-Feb-19	8080.50	18-May-19	8903.45	17-Aug-19	9177.77	17-Nov-19	8613.26
18-Feb-19	8054.28	19-May-19	8916.15	18-Aug-19	9204.78	18-Nov-19	8599.66
19-Feb-19	7958.96	20-May-19	8932.21	19-Aug-19	9225.73	19-Nov-19	8658.48
20-Feb-19	7949.77	21-May-19	8885.26	20-Aug-19	9227.67	20-Nov-19	8624.82
21-Feb-19	7955.58	22-May-19	8920.62	21-Aug-19	9235.06	21-Nov-19	8581.41
22-Feb-19	7986.70	23-May-19	8956.99	22-Aug-19	9230.22	22-Nov-19	8531.32
23-Feb-19	8047.87	24-May-19	8996.80	23-Aug-19	9220.99	23-Nov-19	8480.00
24-Feb-19	8136.57	25-May-19	9034.03	24-Aug-19	9211.98	24-Nov-19	8433.58
25-Feb-19	8248.04	26-May-19	9060.82	25-Aug-19	9206.41	25-Nov-19	8396.53
26-Feb-19	8046.27	27-May-19	9076.01	26-Aug-19	9206.31	26-Nov-19	8423.48
27-Feb-19	8134.69	28-May-19	9065.92	27-Aug-19	9201.49	27-Nov-19	8392.54
28-Feb-19	8218.52	29-May-19	9089.18	28-Aug-19	9206.69	28-Nov-19	8363.25
1-Mar-19	8581.11	30-May-19	9108.94	29-Aug-19	9217.93	29-Nov-19	8337.91
2-Mar-19	8671.33	31-May-19	9118.09	30-Aug-19	9240.88	30-Nov-19	8319.36
3-Mar-19	8744.62	1-Jun-19	9185.28	31-Aug-19	9273.36	1-Dec-19	8044.16
4-Mar-19	8786.34	2-Jun-19	9173.86	1-Sep-19	9260.12	2-Dec-19	8062.52
5-Mar-19	8770.66	3-Jun-19	9156.56	2-Sep-19	9309.45	3-Dec-19	8412.87
6-Mar-19	8780.85	4-Jun-19	9006.77	3-Sep-19	9301.09	4-Dec-19	8450.75
7-Mar-19	8780.78	5-Jun-19	8993.11	4-Sep-19	9320.79	5-Dec-19	8464.89
8-Mar-19	8785.00	6-Jun-19	9001.22	5-Sep-19	9328.56	6-Dec-19	8451.63
9-Mar-19	8794.61	7-Jun-19	9037.13	6-Sep-19	9327.86	7-Dec-19	8411.70
10-Mar-19	8801.93	8-Jun-19	9101.29	7-Sep-19	9320.91	8-Dec-19	8354.49
11-Mar-19	8794.03	9-Jun-19	9190.04	8-Sep-19	9302.71	9-Dec-19	8295.62
12-Mar-19	8714.20	10-Jun-19	9294.79	9-Sep-19	9266.35	10-Dec-19	8346.93
13-Mar-19	8682.39	11-Jun-19	9318.42	10-Sep-19	9237.66	11-Dec-19	8285.09
14-Mar-19	8665.67	12-Jun-19	9359.28	11-Sep-19	9179.36	12-Dec-19	8225.68
15-Mar-19	8668.13	13-Jun-19	9366.96	12-Sep-19	9114.00	13-Dec-19	8168.18
16-Mar-19	8676.44	14-Jun-19	9340.66	13-Sep-19	9054.82	14-Dec-19	8116.15
17-Mar-19	8674.99	15-Jun-19	9290.40	14-Sep-19	9012.99	15-Dec-19	8074.87
18-Mar-19	8666.74	16-Jun-19	9227.57	15-Sep-19	8992.47	16-Dec-19	8053.99
19-Mar-19	8677.85	17-Jun-19	9161.61	16-Sep-19	8994.02	17-Dec-19	8042.58
20-Mar-19	8682.26	18-Jun-19	9077.90	17-Sep-19	9053.40	18-Dec-19	8038.53

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
21-Mar-19	8682.70	19-Jun-19	9047.14	18-Sep-19	9086.83	19-Dec-19	8057.27
22-Mar-19	8680.61	20-Jun-19	9036.68	19-Sep-19	9105.01	20-Dec-19	8088.37
23-Mar-19	8678.08	21-Jun-19	9044.82	20-Sep-19	9107.91	21-Dec-19	8118.70
24-Mar-19	8678.96	22-Jun-19	9067.73	21-Sep-19	9103.40	22-Dec-19	8140.82
25-Mar-19	8682.86	23-Jun-19	9099.11	22-Sep-19	9100.31	23-Dec-19	8149.64
26-Mar-19	8702.27	24-Jun-19	9131.63	23-Sep-19	9106.95	24-Dec-19	8219.88
27-Mar-19	8699.82	25-Jun-19	9207.60	24-Sep-19	9211.25	25-Dec-19	8223.38
28-Mar-19	8707.26	26-Jun-19	9232.27	25-Sep-19	9208.17	26-Dec-19	8238.64
29-Mar-19	8723.87	27-Jun-19	9261.30	26-Sep-19	9206.49	27-Dec-19	8270.41
30-Mar-19	8758.26	28-Jun-19	9277.55	27-Sep-19	9204.81	28-Dec-19	8308.36
31-Mar-19	8809.93	29-Jun-19	9268.41	28-Sep-19	9196.24	29-Dec-19	8339.08
		30-Jun-19	9233.69	29-Sep-19	9174.07	30-Dec-19	8343.90
				30-Sep-19	9135.00	31-Dec-19	8314.08

Table B8: Forecasted daily peak load of BPS of year 2020

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
1-Jan-20	8610.61	1-Apr-20	9637.10	1-Jul-20	9811.91	1-Oct-20	9401.78
2-Jan-20	8627.65	2-Apr-20	9417.93	2-Jul-20	9752.44	2-Oct-20	9308.02
3-Jan-20	8654.58	3-Apr-20	9480.25	3-Jul-20	9711.83	3-Oct-20	9207.49
4-Jan-20	8688.12	4-Apr-20	9520.56	4-Jul-20	9688.13	4-Oct-20	9114.72
5-Jan-20	8723.10	5-Apr-20	9542.53	5-Jul-20	9679.25	5-Oct-20	9044.93
6-Jan-20	8749.62	6-Apr-20	9558.25	6-Jul-20	9681.79	6-Oct-20	9002.66
7-Jan-20	8758.84	7-Apr-20	9568.70	7-Jul-20	9691.02	7-Oct-20	8988.15
8-Jan-20	8745.74	8-Apr-20	9576.36	8-Jul-20	9701.42	8-Oct-20	9222.53
9-Jan-20	8733.29	9-Apr-20	9632.79	9-Jul-20	9636.09	9-Oct-20	9249.96
10-Jan-20	8710.94	10-Apr-20	9628.14	10-Jul-20	9675.52	10-Oct-20	9287.68
11-Jan-20	8681.86	11-Apr-20	9633.23	11-Jul-20	9715.42	11-Oct-20	9333.33
12-Jan-20	8653.40	12-Apr-20	9654.56	12-Jul-20	9754.46	12-Oct-20	9384.90
13-Jan-20	8629.31	13-Apr-20	9673.40	13-Jul-20	9790.20	13-Oct-20	9434.40
14-Jan-20	8609.66	14-Apr-20	9673.97	14-Jul-20	9817.99	14-Oct-20	9478.60
15-Jan-20	8635.37	15-Apr-20	9654.73	15-Jul-20	9836.26	15-Oct-20	9394.43
16-Jan-20	8619.36	16-Apr-20	9700.62	16-Jul-20	9859.33	16-Oct-20	9426.46
17-Jan-20	8613.04	17-Apr-20	9655.01	17-Jul-20	9842.27	17-Oct-20	9458.86
18-Jan-20	8616.85	18-Apr-20	9633.37	18-Jul-20	9818.30	18-Oct-20	9488.98
19-Jan-20	8629.09	19-Apr-20	9631.89	19-Jul-20	9785.42	19-Oct-20	9513.41
20-Jan-20	8645.58	20-Apr-20	9639.04	20-Jul-20	9747.96	20-Oct-20	9523.89
21-Jan-20	8662.86	21-Apr-20	9641.19	21-Jul-20	9711.71	21-Oct-20	9513.17
22-Jan-20	8730.03	22-Apr-20	9624.52	22-Jul-20	9682.70	22-Oct-20	9499.64
23-Jan-20	8738.76	23-Apr-20	9698.45	23-Jul-20	9655.08	23-Oct-20	9457.76
24-Jan-20	8730.29	24-Apr-20	9617.27	24-Jul-20	9657.73	24-Oct-20	9412.83
25-Jan-20	8710.47	25-Apr-20	9514.59	25-Jul-20	9669.73	25-Oct-20	9370.50

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
26-Jan-20	8685.61	26-Apr-20	9416.23	26-Jul-20	9685.47	26-Oct-20	9335.13
27-Jan-20	8661.26	27-Apr-20	9335.48	27-Jul-20	9699.05	27-Oct-20	9307.58
28-Jan-20	8639.94	28-Apr-20	9273.99	28-Jul-20	9705.92	28-Oct-20	9290.36
29-Jan-20	8448.25	29-Apr-20	9223.87	29-Jul-20	9702.92	29-Oct-20	9289.50
30-Jan-20	8445.23	30-Apr-20	9162.02	30-Jul-20	9673.65	30-Oct-20	9317.76
31-Jan-20	8449.82	1-May-20	9278.60	31-Jul-20	9665.21	31-Oct-20	9368.52
1-Feb-20	8639.20	2-May-20	9253.56	1-Aug-20	9682.73	1-Nov-20	9146.61
2-Feb-20	8655.26	3-May-20	9226.36	2-Aug-20	9671.85	2-Nov-20	9208.51
3-Feb-20	8669.53	4-May-20	9200.01	3-Aug-20	9663.41	3-Nov-20	9251.60
4-Feb-20	8678.61	5-May-20	9175.21	4-Aug-20	9657.32	4-Nov-20	9272.56
5-Feb-20	8696.72	6-May-20	9152.42	5-Aug-20	9651.89	5-Nov-20	9515.90
6-Feb-20	8690.78	7-May-20	9110.73	6-Aug-20	9625.99	6-Nov-20	9475.25
7-Feb-20	8673.22	8-May-20	9099.80	7-Aug-20	9630.52	7-Nov-20	9426.77
8-Feb-20	8650.48	9-May-20	9096.44	8-Aug-20	9634.62	8-Nov-20	9376.95
9-Feb-20	8630.40	10-May-20	9108.85	9-Aug-20	9636.13	9-Nov-20	9330.06
10-Feb-20	8612.56	11-May-20	9142.27	10-Aug-20	9635.53	10-Nov-20	9287.87
11-Feb-20	8597.90	12-May-20	9193.48	11-Aug-20	9636.89	11-Nov-20	9247.97
12-Feb-20	8614.67	13-May-20	9251.74	12-Aug-20	9645.04	12-Nov-20	9231.10
13-Feb-20	8623.86	14-May-20	9257.00	13-Aug-20	9636.37	13-Nov-20	9216.13
14-Feb-20	8625.26	15-May-20	9319.67	14-Aug-20	9651.80	14-Nov-20	9197.91
15-Feb-20	8615.47	16-May-20	9378.12	15-Aug-20	9677.12	15-Nov-20	9177.22
16-Feb-20	8597.37	17-May-20	9422.84	16-Aug-20	9707.41	16-Nov-20	9157.34
17-Feb-20	8573.77	18-May-20	9449.38	17-Aug-20	9738.42	17-Nov-20	9140.47
18-Feb-20	8545.29	19-May-20	9463.27	18-Aug-20	9766.77	18-Nov-20	9125.84
19-Feb-20	8444.14	20-May-20	9480.62	19-Aug-20	9788.74	19-Nov-20	9188.20
20-Feb-20	8434.11	21-May-20	9430.74	20-Aug-20	9791.29	20-Nov-20	9152.54
21-Feb-20	8440.17	22-May-20	9468.04	21-Aug-20	9799.16	21-Nov-20	9106.65
22-Feb-20	8473.19	23-May-20	9506.38	22-Aug-20	9794.01	22-Nov-20	9053.74
23-Feb-20	8538.19	24-May-20	9548.33	23-Aug-20	9784.17	23-Nov-20	8999.58
24-Feb-20	8632.47	25-May-20	9587.56	24-Aug-20	9774.57	24-Nov-20	8950.62
25-Feb-20	8751.01	26-May-20	9615.76	25-Aug-20	9768.63	25-Nov-20	8911.61
26-Feb-20	8537.49	27-May-20	9631.69	26-Aug-20	9768.52	26-Nov-20	8940.66
27-Feb-20	8631.68	28-May-20	9620.96	27-Aug-20	9763.64	27-Nov-20	8908.28
28-Feb-20	8721.13	29-May-20	9645.72	28-Aug-20	9769.50	28-Nov-20	8877.73
29-Feb-20	8850.65	30-May-20	9666.70	29-Aug-20	9781.83	29-Nov-20	8851.43
1-Mar-20	9106.32	31-May-20	9676.45	30-Aug-20	9806.58	30-Nov-20	8832.35
2-Mar-20	9202.72	1-Jun-20	9747.89	31-Aug-20	9841.42	1-Dec-20	8541.03
3-Mar-20	9281.16	2-Jun-20	9735.97	1-Sep-20	9827.86	2-Dec-20	8560.84
4-Mar-20	9326.16	3-Jun-20	9717.88	2-Sep-20	9880.64	3-Dec-20	8932.91
5-Mar-20	9310.31	4-Jun-20	9559.04	3-Sep-20	9871.55	4-Dec-20	8972.60
6-Mar-20	9321.67	5-Jun-20	9544.59	4-Sep-20	9892.68	5-Dec-20	8987.11
7-Mar-20	9321.94	6-Jun-20	9553.21	5-Sep-20	9901.05	6-Dec-20	8972.55
8-Mar-20	9326.45	7-Jun-20	9591.33	6-Sep-20	9900.26	7-Dec-20	8929.68
9-Mar-20	9336.41	8-Jun-20	9659.41	7-Sep-20	9892.66	8-Dec-20	8868.41
10-Mar-20	9343.74	9-Jun-20	9753.52	8-Sep-20	9872.99	9-Dec-20	8805.25

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
11-Mar-20	9334.91	10-Jun-20	9864.58	9-Sep-20	9833.99	10-Dec-20	8860.16
12-Mar-20	9249.80	11-Jun-20	9889.84	10-Sep-20	9803.21	11-Dec-20	8793.85
13-Mar-20	9215.48	12-Jun-20	9933.24	11-Sep-20	9741.07	12-Dec-20	8730.05
14-Mar-20	9197.16	13-Jun-20	9941.54	12-Sep-20	9671.47	13-Dec-20	8668.32
15-Mar-20	9199.23	14-Jun-20	9913.81	13-Sep-20	9608.42	14-Dec-20	8612.47
16-Mar-20	9207.66	15-Jun-20	9860.65	14-Sep-20	9563.73	15-Dec-20	8568.16
17-Mar-20	9206.01	16-Jun-20	9794.11	15-Sep-20	9541.60	16-Dec-20	8545.61
18-Mar-20	9197.31	17-Jun-20	9724.17	16-Sep-20	9542.85	17-Dec-20	8533.82
19-Mar-20	9209.36	18-Jun-20	9635.56	17-Sep-20	9605.56	18-Dec-20	8529.39
20-Mar-20	9214.24	19-Jun-20	9602.85	18-Sep-20	9641.23	19-Dec-20	8549.10
21-Mar-20	9214.84	20-Jun-20	9591.52	19-Sep-20	9660.95	20-Dec-20	8581.86
22-Mar-20	9212.66	21-Jun-20	9599.83	20-Sep-20	9664.64	21-Dec-20	8613.83
23-Mar-20	9209.94	22-Jun-20	9623.75	21-Sep-20	9660.59	22-Dec-20	8637.14
24-Mar-20	9210.71	23-Jun-20	9656.67	22-Sep-20	9658.07	23-Dec-20	8646.40
25-Mar-20	9214.63	24-Jun-20	9690.87	23-Sep-20	9665.77	24-Dec-20	8722.19
26-Mar-20	9234.90	25-Jun-20	9771.42	24-Sep-20	9776.24	25-Dec-20	8725.81
27-Mar-20	9231.81	26-Jun-20	9797.41	25-Sep-20	9773.35	26-Dec-20	8741.86
28-Mar-20	9239.42	27-Jun-20	9828.01	26-Sep-20	9771.81	27-Dec-20	8775.46
29-Mar-20	9256.98	28-Jun-20	9845.14	27-Sep-20	9770.12	28-Dec-20	8815.64
30-Mar-20	9293.54	29-Jun-20	9835.49	28-Sep-20	9761.00	29-Dec-20	8848.16
31-Mar-20	9348.519	30-Jun-20	9798.82	29-Sep-20	9737.42	30-Dec-20	8853.20
				30-Sep-20	9695.90	31-Dec-20	8821.47

Table B9: Forecasted daily peak load of BPS of year 2021

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
1-Jan-21	9126.90	1-Apr-21	10214.55	1-Jul-21	10400.61	1-Oct-21	9967.91
2-Jan-21	9144.90	2-Apr-21	9982.54	2-Jul-21	10337.80	2-Oct-21	9868.41
3-Jan-21	9173.52	3-Apr-21	10049.05	3-Jul-21	10294.70	3-Oct-21	9761.71
4-Jan-21	9209.20	4-Apr-21	10092.14	4-Jul-21	10269.36	4-Oct-21	9663.17
5-Jan-21	9246.44	5-Apr-21	10115.66	5-Jul-21	10259.62	5-Oct-21	9588.84
6-Jan-21	9274.70	6-Apr-21	10132.36	6-Jul-21	10261.94	6-Oct-21	9543.59
7-Jan-21	9284.64	7-Apr-21	10143.29	7-Jul-21	10271.38	7-Oct-21	9527.69
8-Jan-21	9270.75	8-Apr-21	10151.12	8-Jul-21	10282.16	8-Oct-21	9774.75
9-Jan-21	9257.67	9-Apr-21	10211.23	9-Jul-21	10212.78	9-Oct-21	9803.60
10-Jan-21	9234.05	10-Apr-21	10205.90	10-Jul-21	10254.50	10-Oct-21	9843.54
11-Jan-21	9203.24	11-Apr-21	10210.73	11-Jul-21	10296.84	11-Oct-21	9892.04
12-Jan-21	9173.03	12-Apr-21	10232.63	12-Jul-21	10338.36	12-Oct-21	9946.99
13-Jan-21	9147.44	13-Apr-21	10251.95	13-Jul-21	10376.48	13-Oct-21	9999.92
14-Jan-21	9126.58	14-Apr-21	10252.20	14-Jul-21	10406.26	14-Oct-21	10047.34
15-Jan-21	9153.95	15-Apr-21	10231.79	15-Jul-21	10426.03	15-Oct-21	9958.85

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
16-Jan-21	9137.11	16-Apr-21	10280.61	16-Jul-21	10450.43	16-Oct-21	9993.48
17-Jan-21	9130.60	17-Apr-21	10232.70	17-Jul-21	10432.88	17-Oct-21	10028.37
18-Jan-21	9134.84	18-Apr-21	10210.19	18-Jul-21	10407.99	18-Oct-21	10060.66
19-Jan-21	9147.97	19-Apr-21	10209.01	19-Jul-21	10373.66	19-Oct-21	10086.71
20-Jan-21	9165.56	20-Apr-21	10216.98	20-Jul-21	10334.42	20-Oct-21	10097.80
21-Jan-21	9183.93	21-Apr-21	10219.69	21-Jul-21	10296.37	21-Oct-21	10086.28
22-Jan-21	9254.73	22-Apr-21	10202.54	22-Jul-21	10265.87	22-Oct-21	10071.76
23-Jan-21	9263.99	23-Apr-21	10280.62	23-Jul-21	10237.09	23-Oct-21	10026.89
24-Jan-21	9255.04	24-Apr-21	10195.48	24-Jul-21	10239.89	24-Oct-21	9978.71
25-Jan-21	9234.04	25-Apr-21	10087.54	25-Jul-21	10252.52	25-Oct-21	9933.23
26-Jan-21	9207.64	26-Apr-21	9983.95	26-Jul-21	10269.08	26-Oct-21	9895.12
27-Jan-21	9181.70	27-Apr-21	9898.67	27-Jul-21	10283.36	27-Oct-21	9865.38
28-Jan-21	9158.93	28-Apr-21	9833.45	28-Jul-21	10290.54	28-Oct-21	9846.77
29-Jan-21	8955.96	29-Apr-21	9780.06	29-Jul-21	10287.31	29-Oct-21	9845.17
30-Jan-21	8952.66	30-Apr-21	9713.92	30-Jul-21	10255.96	30-Oct-21	9875.18
31-Jan-21	8957.43	1-May-21	9836.88	31-Jul-21	10246.86	31-Oct-21	9929.23
1-Feb-21	9158.06	2-May-21	9809.85	1-Aug-21	10265.37	1-Nov-21	9694.36
2-Feb-21	9175.23	3-May-21	9780.61	2-Aug-21	10253.72	2-Nov-21	9760.48
3-Feb-21	9190.72	4-May-21	9752.32	3-Aug-21	10244.65	3-Nov-21	9806.70
4-Feb-21	9200.90	5-May-21	9725.71	4-Aug-21	10238.09	4-Nov-21	9829.38
5-Feb-21	9220.14	6-May-21	9701.27	5-Aug-21	10232.22	5-Nov-21	10087.49
6-Feb-21	9214.22	7-May-21	9656.95	6-Aug-21	10205.00	6-Nov-21	10044.74
7-Feb-21	9196.05	8-May-21	9645.35	7-Aug-21	10209.63	7-Nov-21	9993.56
8-Feb-21	9172.32	9-May-21	9641.85	8-Aug-21	10213.82	8-Nov-21	9940.80
9-Feb-21	9151.22	10-May-21	9655.07	9-Aug-21	10215.26	9-Nov-21	9891.00
10-Feb-21	9132.28	11-May-21	9690.52	10-Aug-21	10214.43	10-Nov-21	9846.10
11-Feb-21	9116.47	12-May-21	9744.79	11-Aug-21	10215.63	11-Nov-21	9803.65
12-Feb-21	9134.40	13-May-21	9806.56	12-Aug-21	10223.93	12-Nov-21	9785.49
13-Feb-21	9143.47	14-May-21	9812.41	13-Aug-21	10214.73	13-Nov-21	9769.50
14-Feb-21	9144.16	15-May-21	9879.02	14-Aug-21	10230.80	14-Nov-21	9750.10
15-Feb-21	9132.94	16-May-21	9941.18	15-Aug-21	10257.29	15-Nov-21	9728.06
16-Feb-21	9112.90	17-May-21	9988.86	16-Aug-21	10289.01	16-Nov-21	9706.85
17-Feb-21	9087.10	18-May-21	10017.37	17-Aug-21	10321.49	17-Nov-21	9688.77
18-Feb-21	9056.25	19-May-21	10032.50	18-Aug-21	10351.20	18-Nov-21	9673.09
19-Feb-21	8949.15	20-May-21	10051.17	19-Aug-21	10374.19	19-Nov-21	9739.03
20-Feb-21	8938.24	21-May-21	9998.34	20-Aug-21	10377.42	20-Nov-21	9701.33
21-Feb-21	8944.53	22-May-21	10037.59	21-Aug-21	10385.76	21-Nov-21	9652.91
22-Feb-21	8979.50	23-May-21	10077.93	22-Aug-21	10380.29	22-Nov-21	9597.15
23-Feb-21	9048.41	24-May-21	10122.05	23-Aug-21	10369.82	23-Nov-21	9540.09
24-Feb-21	9148.44	25-May-21	10163.31	24-Aug-21	10359.60	24-Nov-21	9488.55
25-Feb-21	9274.24	26-May-21	10192.94	25-Aug-21	10353.26	25-Nov-21	9447.54
26-Feb-21	9048.54	27-May-21	10209.61	26-Aug-21	10353.13	26-Nov-21	9478.76
27-Feb-21	9148.67	28-May-21	10198.22	27-Aug-21	10348.20	27-Nov-21	9444.95
28-Feb-21	9243.90	29-May-21	10224.51	28-Aug-21	10354.77	28-Nov-21	9413.14
1-Mar-21	9652.49	30-May-21	10246.75	29-Aug-21	10368.24	29-Nov-21	9385.89

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
2-Mar-21	9755.28	31-May-21	10257.13	30-Aug-21	10394.85	30-Nov-21	9366.30
3-Mar-21	9839.04	1-Jun-21	10333.01	31-Aug-21	10432.14	1-Dec-21	9058.27
4-Mar-21	9887.45	2-Jun-21	10320.59	1-Sep-21	10418.22	2-Dec-21	9079.59
5-Mar-21	9871.49	3-Jun-21	10301.72	2-Sep-21	10474.56	3-Dec-21	9474.18
6-Mar-21	9884.08	4-Jun-21	10133.53	3-Sep-21	10464.71	4-Dec-21	9515.68
7-Mar-21	9884.73	5-Jun-21	10118.27	4-Sep-21	10487.33	5-Dec-21	9530.52
8-Mar-21	9889.55	6-Jun-21	10127.43	5-Sep-21	10496.32	6-Dec-21	9514.59
9-Mar-21	9899.84	7-Jun-21	10167.81	6-Sep-21	10495.44	7-Dec-21	9468.66
10-Mar-21	9907.17	8-Jun-21	10239.90	7-Sep-21	10487.16	8-Dec-21	9403.19
11-Mar-21	9897.36	9-Jun-21	10339.52	8-Sep-21	10465.96	9-Dec-21	9335.58
12-Mar-21	9806.82	10-Jun-21	10457.04	9-Sep-21	10424.21	10-Dec-21	9394.21
13-Mar-21	9769.91	11-Jun-21	10484.00	10-Sep-21	10391.33	11-Dec-21	9323.25
14-Mar-21	9749.92	12-Jun-21	10530.01	11-Sep-21	10325.22	12-Dec-21	9254.90
15-Mar-21	9751.56	13-Jun-21	10538.95	12-Sep-21	10251.26	13-Dec-21	9188.76
16-Mar-21	9760.11	14-Jun-21	10509.79	13-Sep-21	10184.23	14-Dec-21	9128.94
17-Mar-21	9758.26	15-Jun-21	10453.67	14-Sep-21	10136.59	15-Dec-21	9081.47
18-Mar-21	9749.13	16-Jun-21	10383.32	15-Sep-21	10112.78	16-Dec-21	9057.19
19-Mar-21	9762.16	17-Jun-21	10309.30	16-Sep-21	10113.69	17-Dec-21	9045.03
20-Mar-21	9767.55	18-Jun-21	10215.70	17-Sep-21	10179.77	18-Dec-21	9040.19
21-Mar-21	9768.33	19-Jun-21	10180.98	18-Sep-21	10217.76	19-Dec-21	9060.88
22-Mar-21	9766.08	20-Jun-21	10168.75	19-Sep-21	10239.07	20-Dec-21	9095.33
23-Mar-21	9763.15	21-Jun-21	10177.20	20-Sep-21	10243.63	21-Dec-21	9128.96
24-Mar-21	9763.82	22-Jun-21	10202.13	21-Sep-21	10240.10	22-Dec-21	9153.46
25-Mar-21	9767.75	23-Jun-21	10236.61	22-Sep-21	10238.21	23-Dec-21	9163.17
26-Mar-21	9788.85	24-Jun-21	10272.52	23-Sep-21	10247.03	24-Dec-21	9244.74
27-Mar-21	9785.09	25-Jun-21	10357.75	24-Sep-21	10363.80	25-Dec-21	9248.46
28-Mar-21	9792.85	26-Jun-21	10385.07	25-Sep-21	10361.13	26-Dec-21	9265.32
29-Mar-21	9811.38	27-Jun-21	10417.27	26-Sep-21	10359.75	27-Dec-21	9300.77
30-Mar-21	9850.17	28-Jun-21	10435.30	27-Sep-21	10358.06	28-Dec-21	9343.25
31-Mar-21	9908.56	29-Jun-21	10425.13	28-Sep-21	10348.38	29-Dec-21	9377.62
		30-Jun-21	10386.50	29-Sep-21	10323.35	30-Dec-21	9382.89
				30-Sep-21	10279.31	31-Dec-21	9349.19

Table B10: Forecasted daily peak load of BPS of year 2022

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
1-Jan-22	9663.21	1-Apr-22	10814.05	1-Jul-22	11011.96	1-Oct-22	10556.00
2-Jan-22	9682.17	2-Apr-22	10568.76	2-Jul-22	10945.73	2-Oct-22	10450.60
3-Jan-22	9712.50	3-Apr-22	10639.59	3-Jul-22	10900.09	3-Oct-22	10337.56
4-Jan-22	9750.40	4-Apr-22	10685.56	4-Jul-22	10873.06	4-Oct-22	10233.07
5-Jan-22	9789.95	5-Apr-22	10710.69	5-Jul-22	10862.41	5-Oct-22	10154.07
6-Jan-22	9820.02	6-Apr-22	10728.39	6-Jul-22	10864.49	6-Oct-22	10105.71

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
7-Jan-22	9830.71	7-Apr-22	10739.82	7-Jul-22	10874.13	7-Oct-22	10088.36
8-Jan-22	9816.02	8-Apr-22	10747.81	8-Jul-22	10885.29	8-Oct-22	10348.45
9-Jan-22	9802.30	9-Apr-22	10811.70	9-Jul-22	10811.69	9-Oct-22	10378.73
10-Jan-22	9777.39	10-Apr-22	10805.65	10-Jul-22	10855.76	10-Oct-22	10420.93
11-Jan-22	9744.82	11-Apr-22	10810.17	11-Jul-22	10900.59	11-Oct-22	10472.36
12-Jan-22	9712.81	12-Apr-22	10832.60	12-Jul-22	10944.68	12-Oct-22	10530.78
13-Jan-22	9685.67	13-Apr-22	10852.39	13-Jul-22	10985.25	13-Oct-22	10587.23
14-Jan-22	9663.58	14-Apr-22	10852.28	14-Jul-22	11017.10	14-Oct-22	10637.98
15-Jan-22	9692.65	15-Apr-22	10830.68	15-Jul-22	11038.44	15-Oct-22	10545.13
16-Jan-22	9674.97	16-Apr-22	10882.51	16-Jul-22	11064.17	16-Oct-22	10582.45
17-Jan-22	9668.28	17-Apr-22	10832.29	17-Jul-22	11046.16	17-Oct-22	10619.92
18-Jan-22	9672.98	18-Apr-22	10808.91	18-Jul-22	11020.37	18-Oct-22	10654.44
19-Jan-22	9687.03	19-Apr-22	10808.09	19-Jul-22	10984.58	19-Oct-22	10682.15
20-Jan-22	9705.76	20-Apr-22	10816.95	20-Jul-22	10943.56	20-Oct-22	10693.84
21-Jan-22	9725.26	21-Apr-22	10820.29	21-Jul-22	10903.69	21-Oct-22	10681.50
22-Jan-22	9799.76	22-Apr-22	10802.69	22-Jul-22	10871.69	22-Oct-22	10665.93
23-Jan-22	9809.57	23-Apr-22	10885.00	23-Jul-22	10841.75	23-Oct-22	10617.96
24-Jan-22	9800.13	24-Apr-22	10795.88	24-Jul-22	10844.70	24-Oct-22	10566.39
25-Jan-22	9777.93	25-Apr-22	10682.62	25-Jul-22	10857.98	25-Oct-22	10517.63
26-Jan-22	9749.94	26-Apr-22	10573.72	26-Jul-22	10875.39	26-Oct-22	10476.66
27-Jan-22	9722.37	27-Apr-22	10483.83	27-Jul-22	10890.38	27-Oct-22	10444.64
28-Jan-22	9698.09	28-Apr-22	10414.83	28-Jul-22	10897.89	28-Oct-22	10424.56
29-Jan-22	9483.44	29-Apr-22	10358.08	29-Jul-22	10894.43	29-Oct-22	10422.15
30-Jan-22	9479.84	30-Apr-22	10287.39	30-Jul-22	10860.92	30-Oct-22	10453.94
31-Jan-22	9484.81	1-May-22	10416.96	31-Jul-22	10851.14	31-Oct-22	10511.38
1-Feb-22	9697.11	2-May-22	10387.89	1-Aug-22	10870.69	1-Nov-22	10263.00
2-Feb-22	9715.45	3-May-22	10356.55	2-Aug-22	10858.23	2-Nov-22	10333.47
3-Feb-22	9732.22	4-May-22	10326.26	3-Aug-22	10848.53	3-Nov-22	10382.94
4-Feb-22	9743.58	5-May-22	10297.78	4-Aug-22	10841.48	4-Nov-22	10407.40
5-Feb-22	9763.98	6-May-22	10271.63	5-Aug-22	10835.15	5-Nov-22	10680.89
6-Feb-22	9758.11	7-May-22	10224.61	6-Aug-22	10806.59	6-Nov-22	10636.00
7-Feb-22	9739.35	8-May-22	10212.32	7-Aug-22	10811.31	7-Nov-22	10582.05
8-Feb-22	9714.65	9-May-22	10208.67	8-Aug-22	10815.56	8-Nov-22	10526.26
9-Feb-22	9692.53	10-May-22	10222.72	9-Aug-22	10816.91	9-Nov-22	10473.47
10-Feb-22	9672.46	11-May-22	10260.26	10-Aug-22	10815.83	10-Nov-22	10425.77
11-Feb-22	9655.48	12-May-22	10317.68	11-Aug-22	10816.84	11-Nov-22	10380.70
12-Feb-22	9674.61	13-May-22	10383.04	12-Aug-22	10825.27	12-Nov-22	10361.16
13-Feb-22	9683.50	14-May-22	10389.51	13-Aug-22	10815.52	13-Nov-22	10344.13
14-Feb-22	9683.41	15-May-22	10460.19	14-Aug-22	10832.23	14-Nov-22	10323.51
15-Feb-22	9670.67	16-May-22	10526.16	15-Aug-22	10859.87	15-Nov-22	10300.09
16-Feb-22	9648.61	17-May-22	10576.88	16-Aug-22	10893.03	16-Nov-22	10277.49
17-Feb-22	9620.50	18-May-22	10607.41	17-Aug-22	10927.00	17-Nov-22	10258.18
18-Feb-22	9587.16	19-May-22	10623.84	18-Aug-22	10958.06	18-Nov-22	10241.39
19-Feb-22	9473.98	20-May-22	10643.88	19-Aug-22	10982.07	19-Nov-22	10310.99
20-Feb-22	9462.14	21-May-22	10588.04	20-Aug-22	10986.04	20-Nov-22	10271.21

Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)	Date	Daily peak load (MW)
21-Feb-22	9468.66	22-May-22	10629.27	21-Aug-22	10994.87	21-Nov-22	10220.21
22-Feb-22	9505.63	23-May-22	10671.64	22-Aug-22	10989.05	22-Nov-22	10161.52
23-Feb-22	9578.55	24-May-22	10717.96	23-Aug-22	10977.92	23-Nov-22	10101.52
24-Feb-22	9684.46	25-May-22	10761.26	24-Aug-22	10967.06	24-Nov-22	10047.36
25-Feb-22	9817.72	26-May-22	10792.35	25-Aug-22	10960.31	25-Nov-22	10004.33
26-Feb-22	9579.40	27-May-22	10809.77	26-Aug-22	10960.15	26-Nov-22	10037.80
27-Feb-22	9685.65	28-May-22	10797.69	27-Aug-22	10955.19	27-Nov-22	10002.54
28-Feb-22	9786.83	29-May-22	10825.57	28-Aug-22	10962.49	28-Nov-22	9969.48
1-Mar-22	10219.62	30-May-22	10849.10	29-Aug-22	10977.16	29-Nov-22	9941.28
2-Mar-22	10328.99	31-May-22	10860.12	30-Aug-22	11005.71	30-Nov-22	9921.21
3-Mar-22	10418.25	1-Jun-22	10940.64	31-Aug-22	11045.52	1-Dec-22	9595.87
4-Mar-22	10470.20	2-Jun-22	10927.72	1-Sep-22	11031.19	2-Dec-22	9618.77
5-Mar-22	10454.21	3-Jun-22	10908.06	2-Sep-22	11091.21	3-Dec-22	10036.67
6-Mar-22	10468.08	4-Jun-22	10730.25	3-Sep-22	11080.57	4-Dec-22	10079.98
7-Mar-22	10469.14	5-Jun-22	10714.16	4-Sep-22	11104.74	5-Dec-22	10095.14
8-Mar-22	10474.29	6-Jun-22	10723.86	5-Sep-22	11114.37	6-Dec-22	10077.76
9-Mar-22	10484.91	7-Jun-22	10766.56	6-Sep-22	11113.39	7-Dec-22	10028.66
10-Mar-22	10492.21	8-Jun-22	10842.76	7-Sep-22	11104.40	8-Dec-22	9958.84
11-Mar-22	10481.37	9-Jun-22	10948.02	8-Sep-22	11081.60	9-Dec-22	9886.61
12-Mar-22	10385.26	10-Jun-22	11072.16	9-Sep-22	11037.02	10-Dec-22	9949.08
13-Mar-22	10345.66	11-Jun-22	11100.89	10-Sep-22	11002.01	11-Dec-22	9873.29
14-Mar-22	10323.94	12-Jun-22	11149.60	11-Sep-22	10931.82	12-Dec-22	9800.22
15-Mar-22	10325.12	13-Jun-22	11159.21	12-Sep-22	10853.37	13-Dec-22	9729.50
16-Mar-22	10333.79	14-Jun-22	11128.58	13-Sep-22	10782.24	14-Dec-22	9665.57
17-Mar-22	10331.75	15-Jun-22	11069.44	14-Sep-22	10731.55	15-Dec-22	9614.82
18-Mar-22	10322.18	16-Jun-22	10995.21	15-Sep-22	10706.00	16-Dec-22	9588.72
19-Mar-22	10336.26	17-Jun-22	10917.01	16-Sep-22	10706.54	17-Dec-22	9576.22
20-Mar-22	10342.18	18-Jun-22	10818.31	17-Sep-22	10776.04	18-Dec-22	9570.95
21-Mar-22	10343.16	19-Jun-22	10781.52	18-Sep-22	10816.41	19-Dec-22	9592.61
22-Mar-22	10340.85	20-Jun-22	10768.35	19-Sep-22	10839.38	20-Dec-22	9628.77
23-Mar-22	10337.72	21-Jun-22	10776.93	20-Sep-22	10844.86	21-Dec-22	9664.08
24-Mar-22	10338.27	22-Jun-22	10802.88	21-Sep-22	10841.93	22-Dec-22	9689.79
25-Mar-22	10342.21	23-Jun-22	10838.93	22-Sep-22	10840.72	23-Dec-22	9699.95
26-Mar-22	10364.13	24-Jun-22	10876.57	23-Sep-22	10850.75	24-Dec-22	9787.53
27-Mar-22	10359.65	25-Jun-22	10966.59	24-Sep-22	10973.93	25-Dec-22	9791.34
28-Mar-22	10367.56	26-Jun-22	10995.27	25-Sep-22	10971.50	26-Dec-22	9809.00
29-Mar-22	10387.08	27-Jun-22	11029.10	26-Sep-22	10970.31	27-Dec-22	9846.35
30-Mar-22	10428.16	28-Jun-22	11048.05	27-Sep-22	10968.62	28-Dec-22	9891.17
31-Mar-22	10490.06	29-Jun-22	11037.35	28-Sep-22	10958.38	29-Dec-22	9927.44
		30-Jun-22	10996.71	29-Sep-22	10931.85	30-Dec-22	9932.96
				30-Sep-22	10885.22	31-Dec-22	9897.23