

Complementary Regional Transmission & Generation Planning

IN A

BROADER PERSPECTIVE.

The Issues to Solve

Lakshitha Weerasinghe

Deputy General Manager,
Transmission & Generation Planning

CEYLON ELECTRICITY BOARD

THINGS TO DISCUSS AND UNDERSTAND BEFORE Complementary Regional Transmission & Generation Planning

SELF RELIANCE Vs CROSS BORDER ENERGY TRADE

- What is the Level of Self Reliance Envisaged in Country Specific Policies? – Sri Lanka's National Energy Policy as a Case study
- Why has Countries Declare Self Reliance as a Policy Target?

THE IDEAL IMPORT VS DOMESTIC ENERGY MIX

- What % Of Electricity are we Comfortable to be Relied Upon from Outside?
- What Is The Minimum Installed Capacity that We Like to be Installed Within the Country?

THINGS TO DISCUSS AND UNDERSTAND BEFORE Complementary Regional Transmission & Generation Planning

What is the Planning Strategy? What is the Objective Function?

Will CBET enhance Energy Security or Compromise it? – What is the Tipping Point?

Challenges to Demand Forecasting

SELF RELIANCE AND CBET

A LOOK AT SRI LANKA'S NATIONAL ENERGY POLICY



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The Gazette of the Democratic Socialist Republic of Sri Lanka
EXTRAORDINARY

National Energy Policy and Strategies of Sri Lanka

1) Assuring Energy Security

Primary and secondary energy supplies of the country will be secured to ensure continuity, adequacy and reliability.

5) Enhancing Self Reliance

Indigenous energy resources will be developed to the optimum levels to **minimise dependence on imported resources**, subject to resolving technical, economic, environmental and social constraints, with the objective of minimising the vulnerability of energy supplies to external situations.

10) Providing Opportunities for Innovation and Entrepreneurship

Considering the limitation to the scale of markets available in Sri Lanka to breed technology intensive local businesses, the **relatively large size of the energy sector** will be utilised to nurture local entrepreneurship and innovation.

ARE WE TO IMPORT POWER OR ENERGY?

**WHAT IS THE MINIMUM LEVEL OF INSTALLED
CAPACITY TO BE MAINTAINED WITHIN THE
COUNTRY?**

**(To Meet the Baseload ENERGY? Or Enough
CAPACITY to meet Power?)**



Cross Border Electricity

Import/Export Interchanges are constrained by POWER and not by ENERGY.

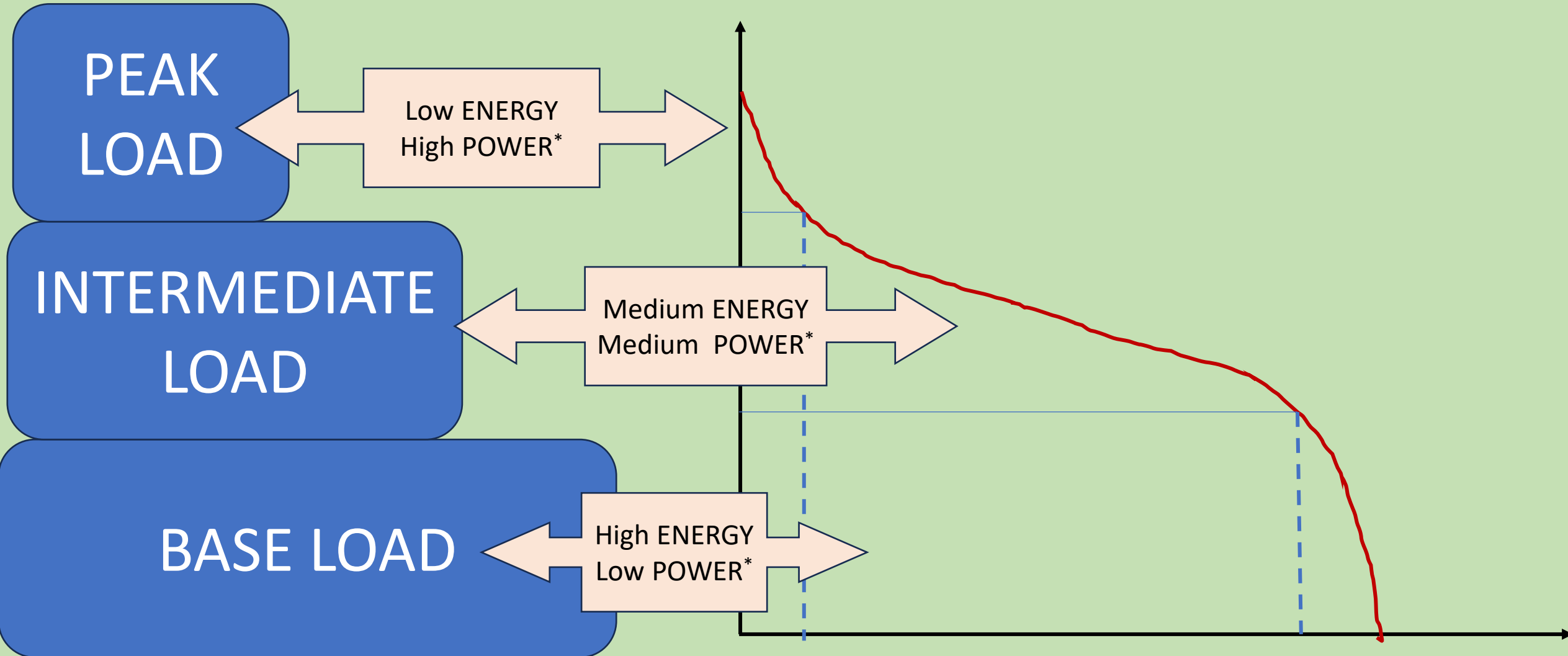
Interconnections are operated at maximum POWER often but never at 100% Utilization (Utilization Factor is based on ENERGY)

Should they then better serve high energy Low Power Demand?
Or a Mix?

Understanding the Demand Regimes

Daily Demand Curve

Load Duration Curve



* Not in terms of the Power demand in MW but POWER required to serve the ENERGY need within the demand Regime



Which Load Regime should we meet?

What is the objective function?

Maximize interchange utilization,
energy security or only cost?

BEFORE COMPLIMENTARY TRANSMISSION AND GENERATION
PLANNING, THE PLANNERS NEEDS A STRATEGY.

WHAT IS IT?

Secure &
Reliable

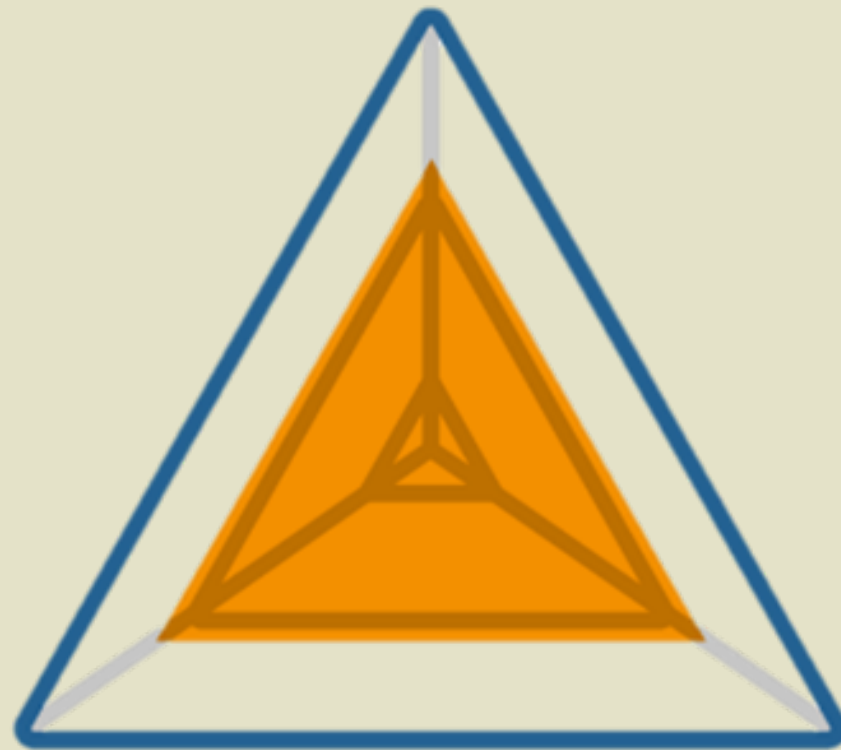


Sustainable



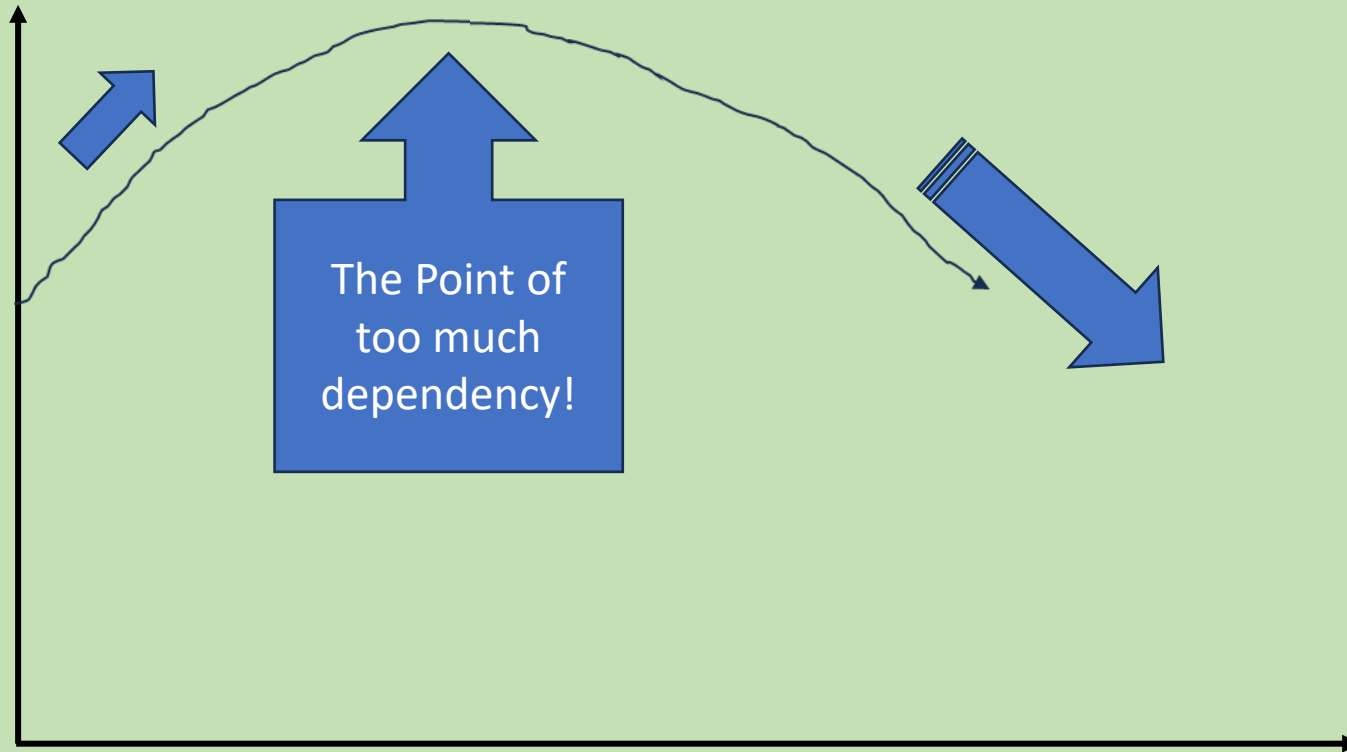
Rs

Economical



Energy Security Vs Interconnection Dependency! (Is there a Tipping Point?)

ENERGY SECURITY



INTERCONNECTION CAPACITY



PLANNING STARTS WITH THE DEMAND FORECAST!

Sri Lanka uses a mix of Time Trend, Econometric Modelling and End User methods to Forecast Demand. But obtaining accurate forecasts for economic parameters is an issue.

With increase use of solar rooftop and solar rooftop with Behind the Meter Storage Solutions, forecasting is an issue.

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With increase penetration of embedded generation (which are negative loads), short term day ahead demand forecasting is getting difficult.

THANK YOU

PS: Apologies for giving a list of Questions, instead of Answers!