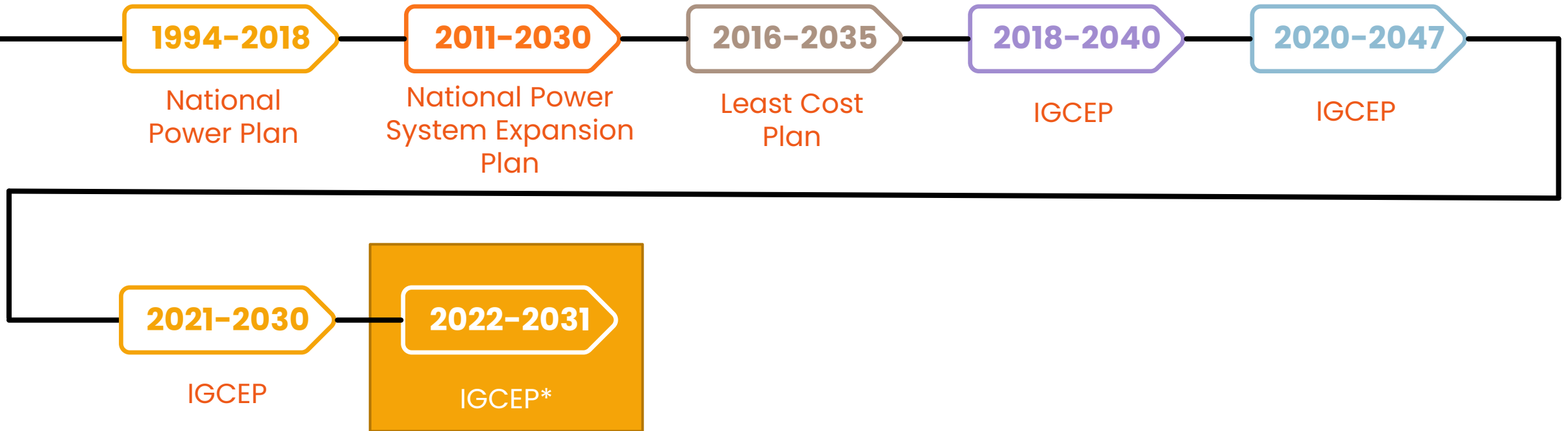


Key Features of
Indicative
Generation
Capacity Expansion
Plan (IGCEP) 2022-31



**Resources
Future**

IGCEP has emerged as a key long-term generation expansion plan for Pakistan.



*The revised version of IGCEP has been submitted by NTDC to NEPRA on 20th September 2022.

IGCEP has seven generation expansion forecast scenarios

Unconstrained VRE Scenario

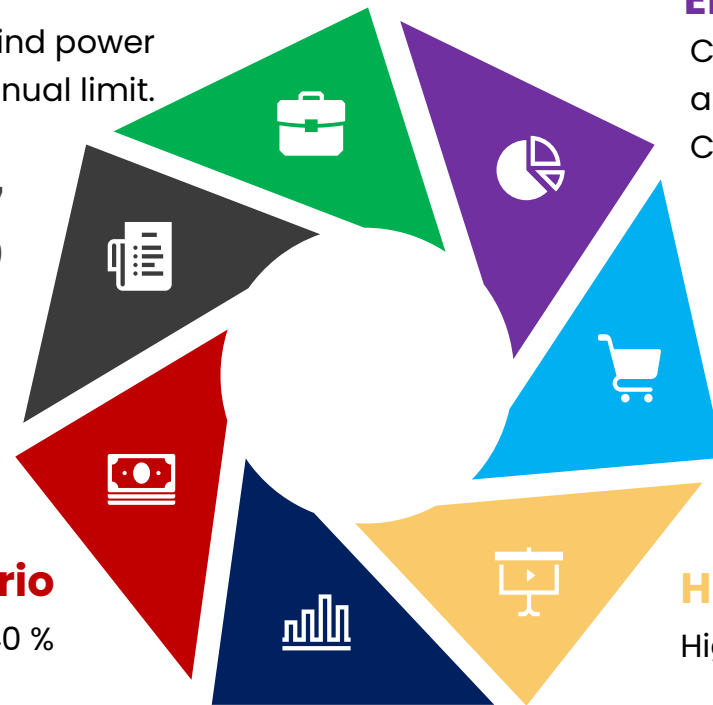
Candidate utility solar PV and Wind power projects are unconstrained i.e., no annual limit.

Local coal inclusion in 2027 and 2030

Considering 1,320 MW of domestic coal-based projects in the year 2027 & 2030.

Low Demand Scenario

Low GDP Growth 3.40 %



Chashma Nuclear (C-5) for Energy Security

Considering Chashma Nuclear (C-5) as a committed power project with CAPEX in the year 2029

Diemer Bhasha HPP in 2029

Considering Diemer Bhasha HPP achieves COD in 2029

High Demand Scenario

High GDP Growth 5.42 %

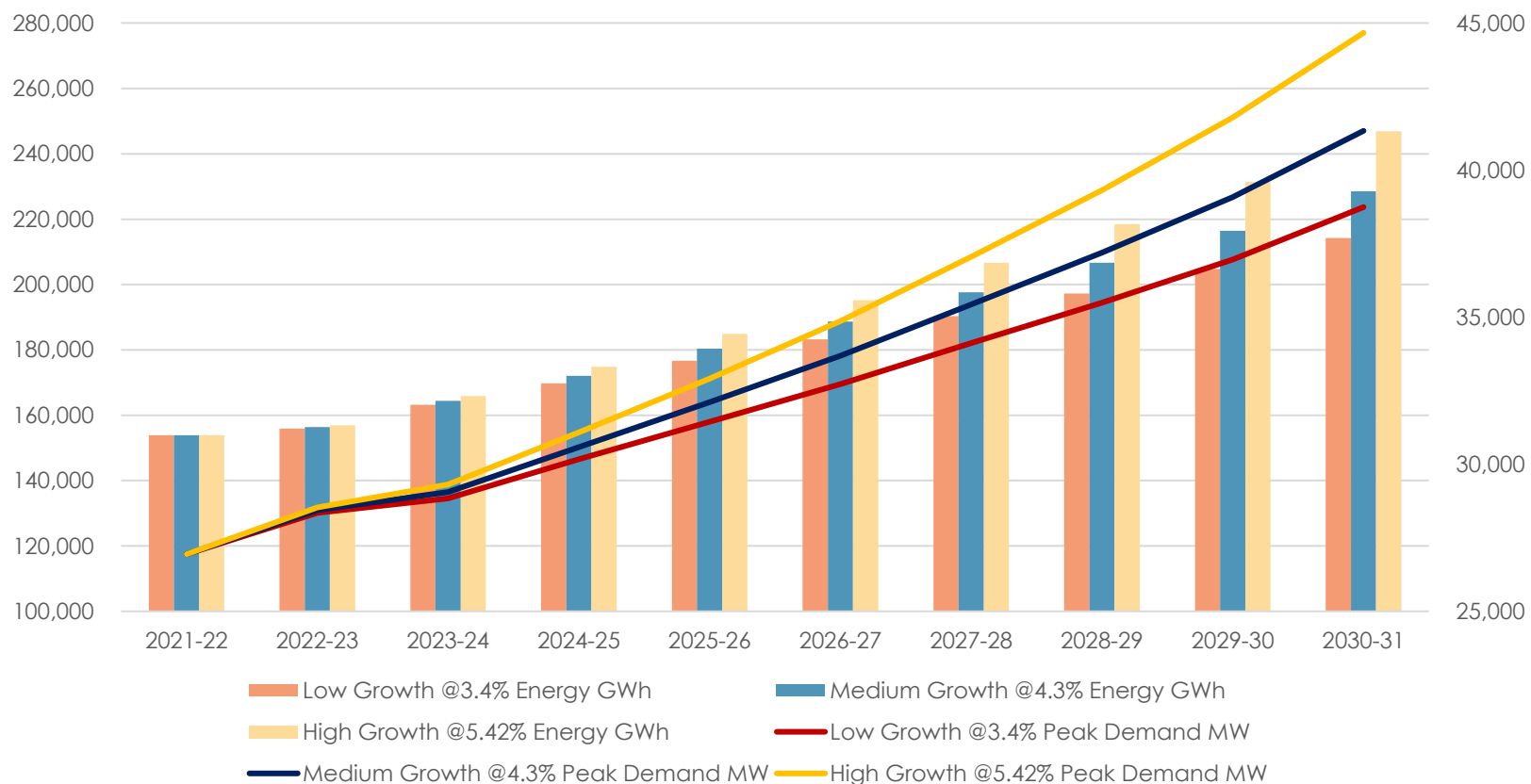
Base case Scenario

Normal GDP Growth 4.30 %

1. Aggressive inclusion of VREs
2. Minimal reliance on imported fuels i.e., Coal, RLNG and RFO
3. All optimized generation is based on Indigenous resources.

IGCEP has provided three demand growth projections.

Demand Growth Projections



- **Low Growth:** Peak Demand increased by 11,799 MW
- **Medium Growth:** Peak Demand increased by 14,396 MW
- **High Growth:** Peak Demand increased by 17,723 MW

IGCEP estimates additional investments of USD 51 to 56 billion by 2031

► **Base case: Investment requirements (CAPEX + OPEX) of USD 52.93 Million by 2031.**

S. no	Forecase Scenario	Investment (USD Million)
1.	Base Case	52.93
2.	Low Demand	51.16
3.	High Demand	55.39
4.	Diامر Bhasha HPP in 2029	53.87
5.	Chashma Nuclear (C-5) for Energy Security	53.28
6.	Local Coal inclusion in 2027 & 2030	53.06
7.	Unconstrained VRE Scenario	52.26

Tariff

NEPRA shall only issue tariff for power plants, equal to or less than what is prescribed in IGCEP. If tariff given is more, then re-run of IGCEP shall be required.

Limitations of IGCEP

Non-binding Plan: Selection of projects in IGCEP does not necessarily guarantee the execution of the project. The projects will require to go through relevant approvals.

Hybrid technologies missing: Current iteration of IGCEP do not model hybrid technologies including Battery based storage systems.

Lack of clarity on provincial mandates: Mandates for public sector power plants are classified by national and provincial agencies. However, for candidate power plants – especially renewables, provincial mandates are not outlined.



**Resources
Future**

Resources Future is a preeminent consulting firm which provides evidence backed independent research, analysis, consultation, advisory, and training services to large and diverse client base across Pakistan.

For more information an insights on IGCEP, reach out to us.

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