

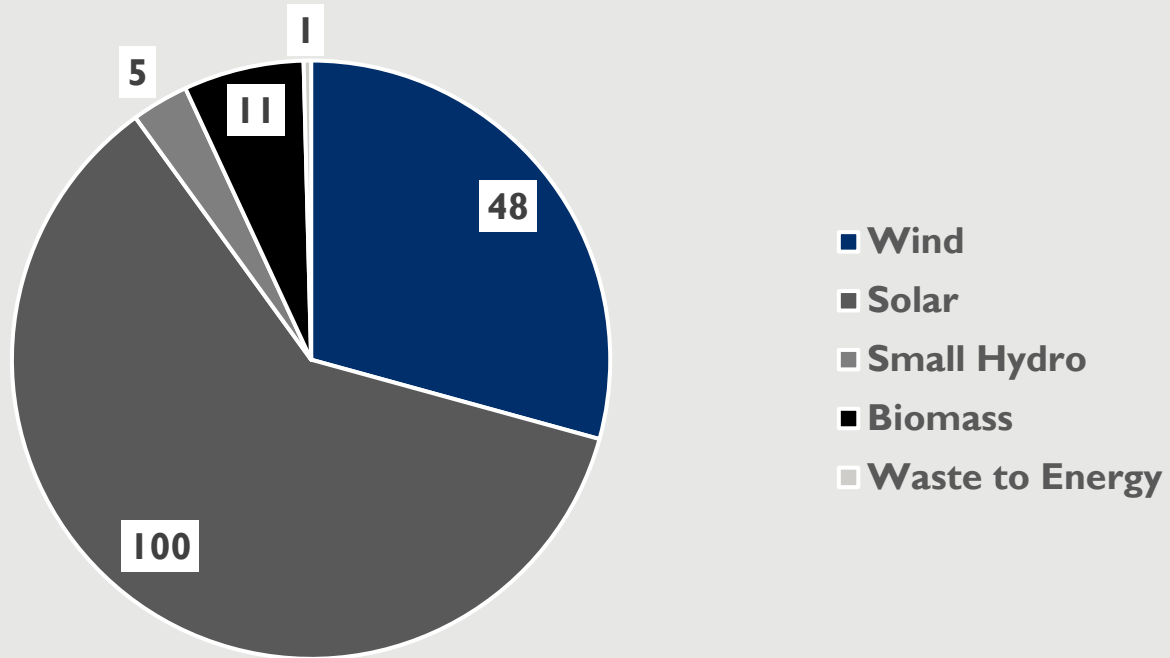
Indian Solar Manufacturing Landscape, Outlook and Opportunities

Subrahmanyam Pulipaka
Chief Executive Officer
National Solar Energy Federation of India

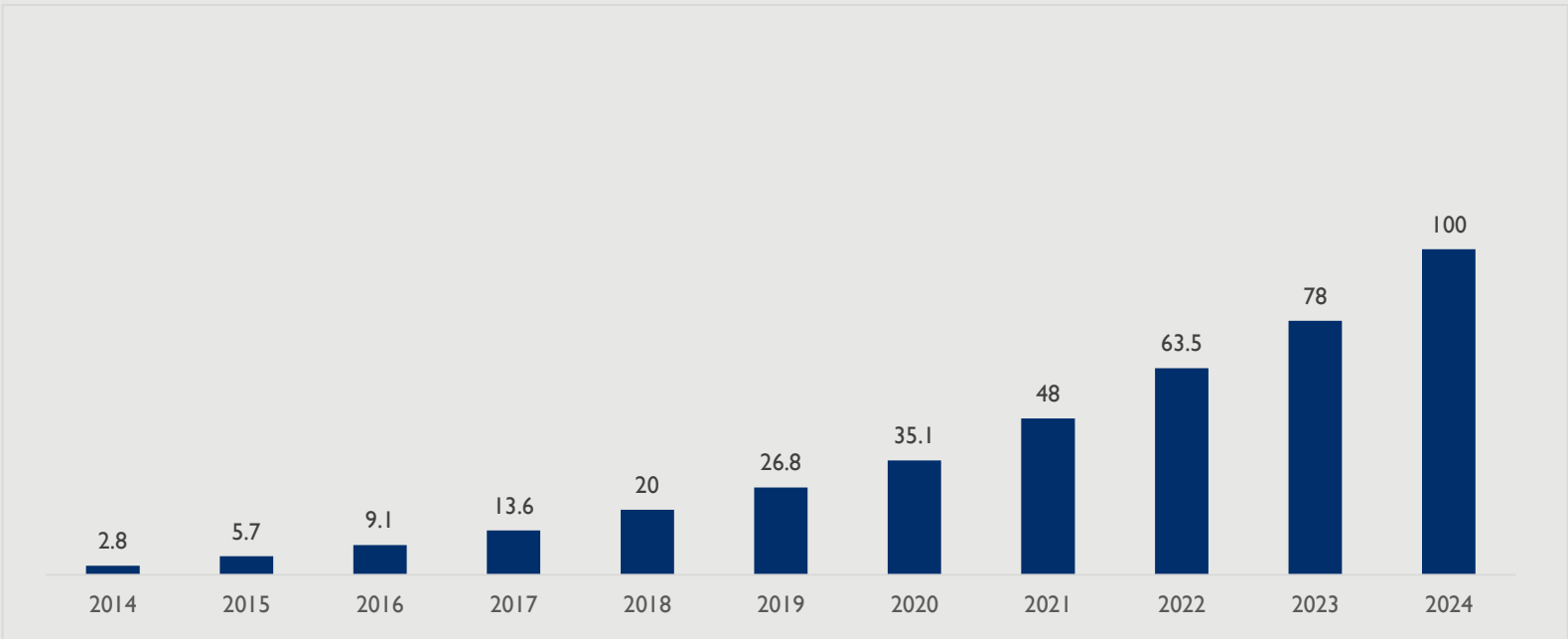


INDIA'S RE CAPACITY (GW) FEB'25

INDIA'S RENEWABLE ENERGY MIX (GW) – FEB'25

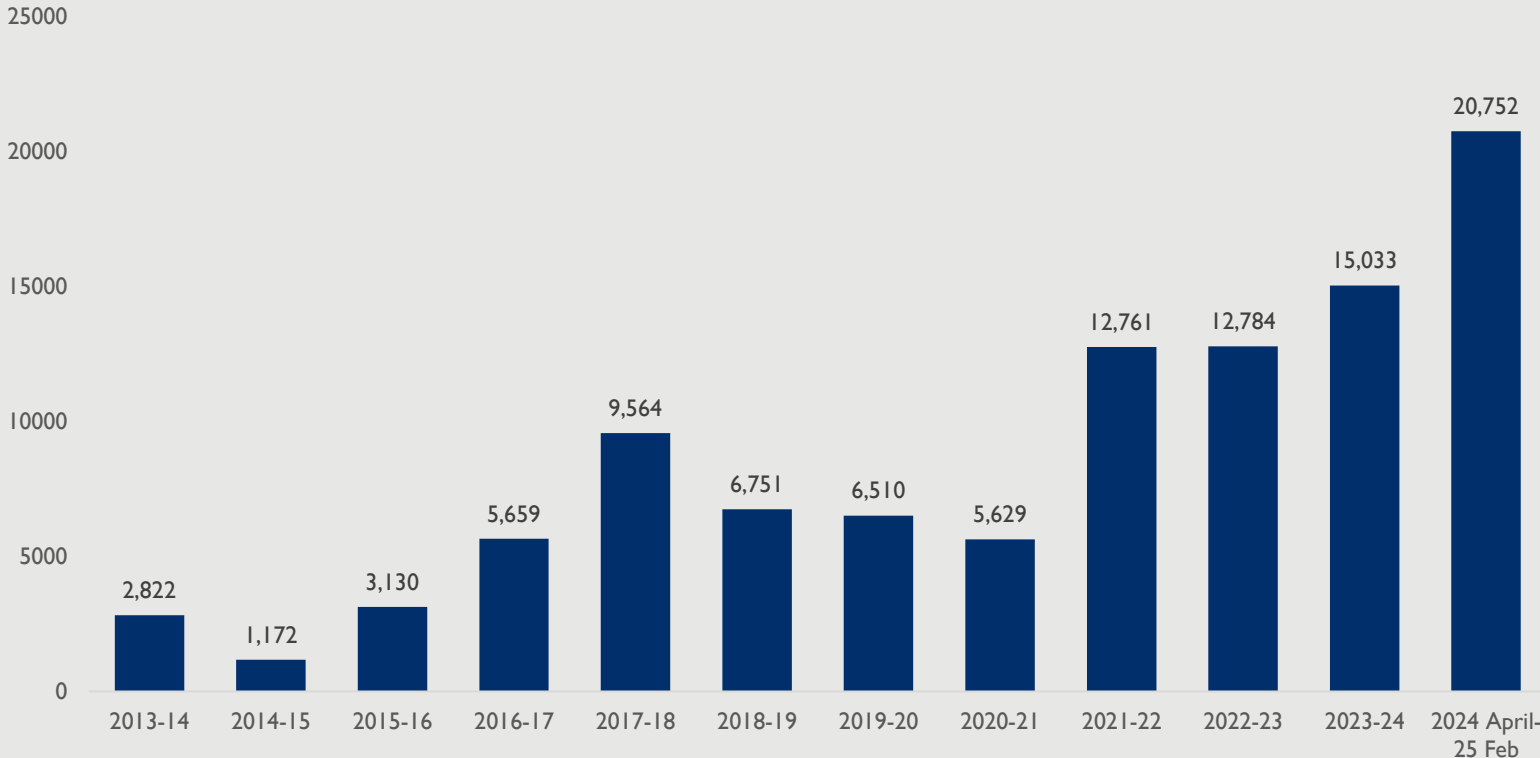


INDIA'S SOLAR JOURNEY



Source: MNRE, <https://mnre.gov.in/en/year-wise-achievement/>

YEAR-ON-YEAR CAPACITY ADDITION(MW)



Source: MNRE, <https://mnre.gov.in/en/year-wise-achievement/>

INDIAN SOLAR MANUFACTURING (PHASES)

Growth Surge
2015 -2018

Fluctuation Post
2019 -2021

Shift to Domestic
Manufacturing
2022 -2023

PROTECTION

- Imposition of Safe Guard Duty
- Anti-Dumping Duty Probe Initiated
- Discussion on imposing heaving customs duty

PROBING

- Quality Concerns on Imports
- Conceptualizing ALMM
- Defining Customs Duty Trajectory

PROACTIVE

- PLI Announcement
- Manufacturing Zones
- ALMM Implementation
- 25% BCD on cells
- 40% BCD on modules

Approved List of Models and Manufacturers (ALMM)



OBJECTIVE



To ensure the reliability and long-term performance of solar PV products by approving verified models and manufacturers.

KEY FEATURES



ALMM consists of LIST-I for solar PV modules and LIST-II for PV cells, mandatory for Government projects.

IMPORTANCE



Only ALMM-listed products are allowed for government-supported projects to ensure energy security and consumer protection.

Production Linked Incentive(PLI) Scheme

Boosting Local Manufacturing



The PLI scheme aims to establish a Giga Watt-scale manufacturing capacity in India for high- efficiency solar PV modules, reducing import dependence.

Incentive Allocation



24,000 crore allocated for supporting manufacturers who set up and commission advanced solar technology plants.

Implementation In Phases



Tranche-II supports the establishment of 39,600 MW manufacturing capacity with post-commissioning financial incentives.

Minimum Efficiency Threshold



Modules must achieve at least 19.5% efficiency with a temperature coefficient better than -0.30% per $^{\circ}\text{C}$

Incentives For Superior Efficiency



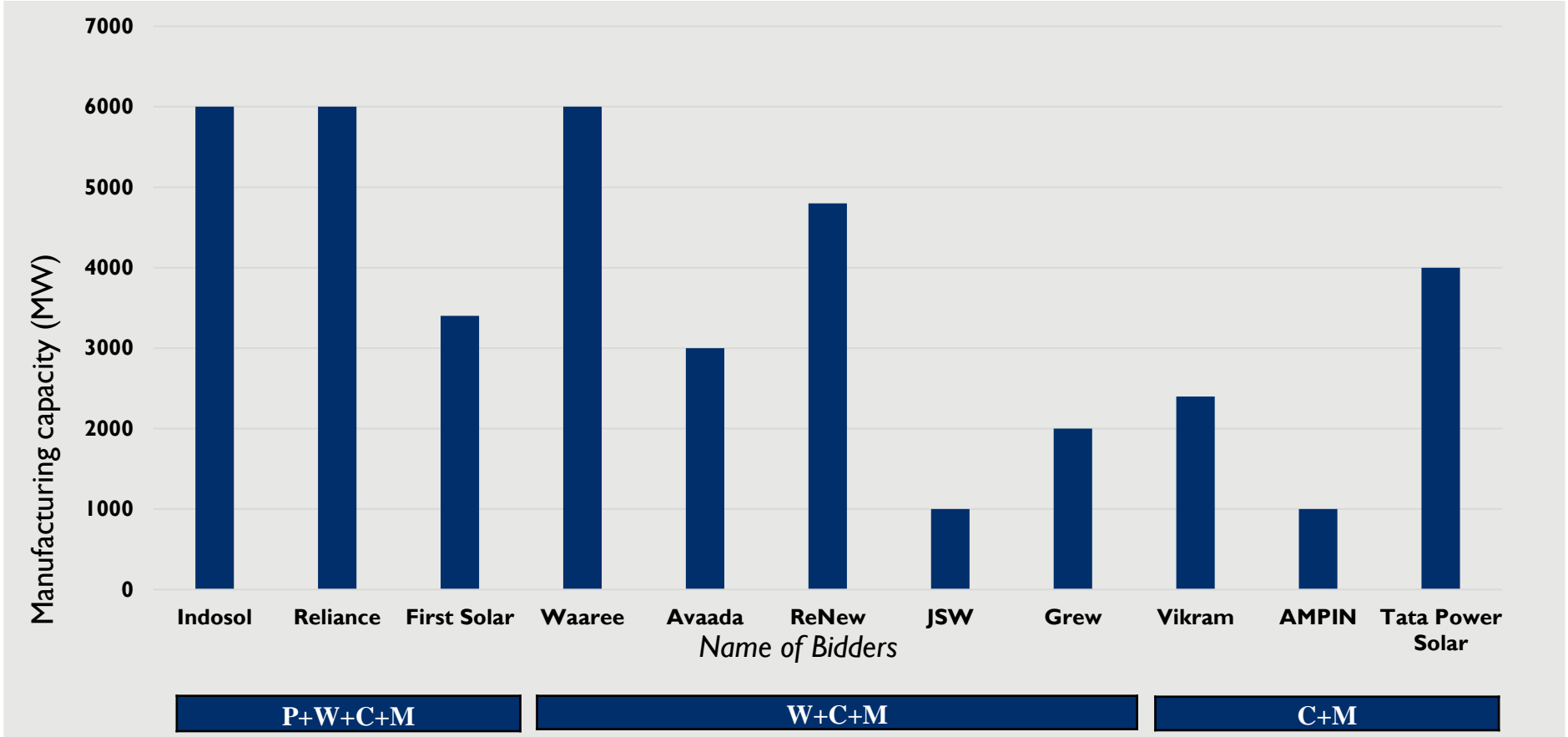
Modules with 20% efficiency or higher receive increased incentives, based on their performance metrics.

Higher Incentives For Cutting- Edge Modules

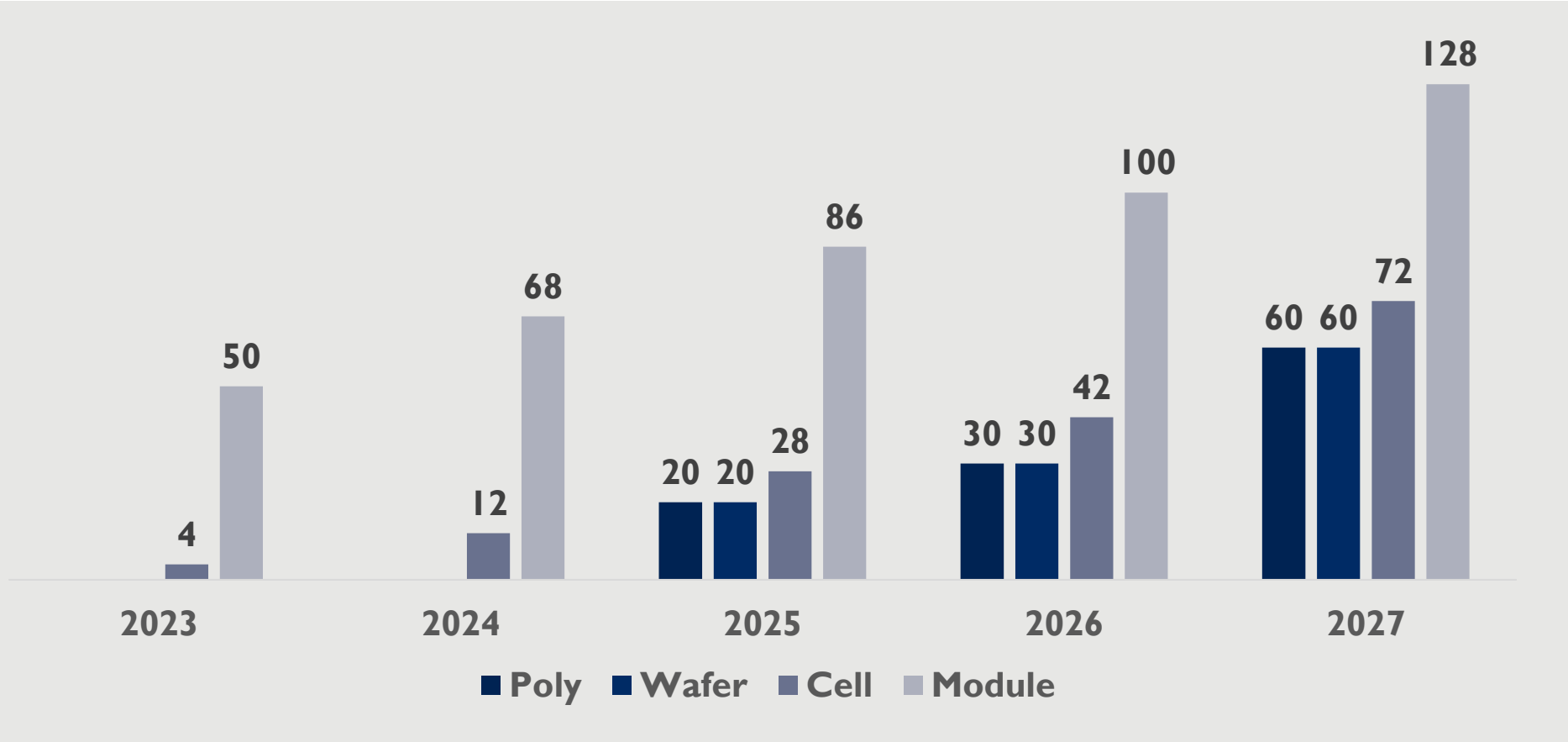


Modules with efficiency above 21.5% attract the highest incentive rates, with additional rewards for superior temperature coefficients

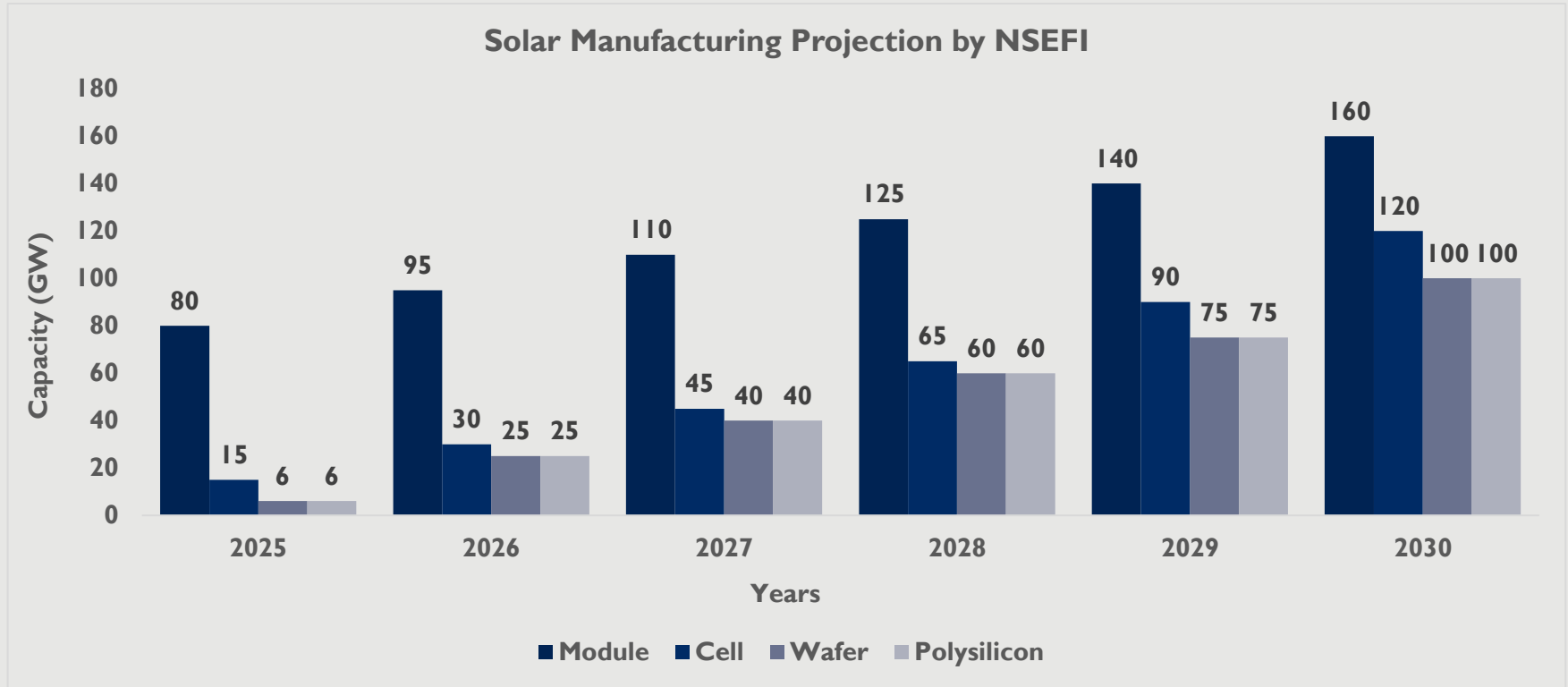
PRODUCTION LINKED INCENTIVE II



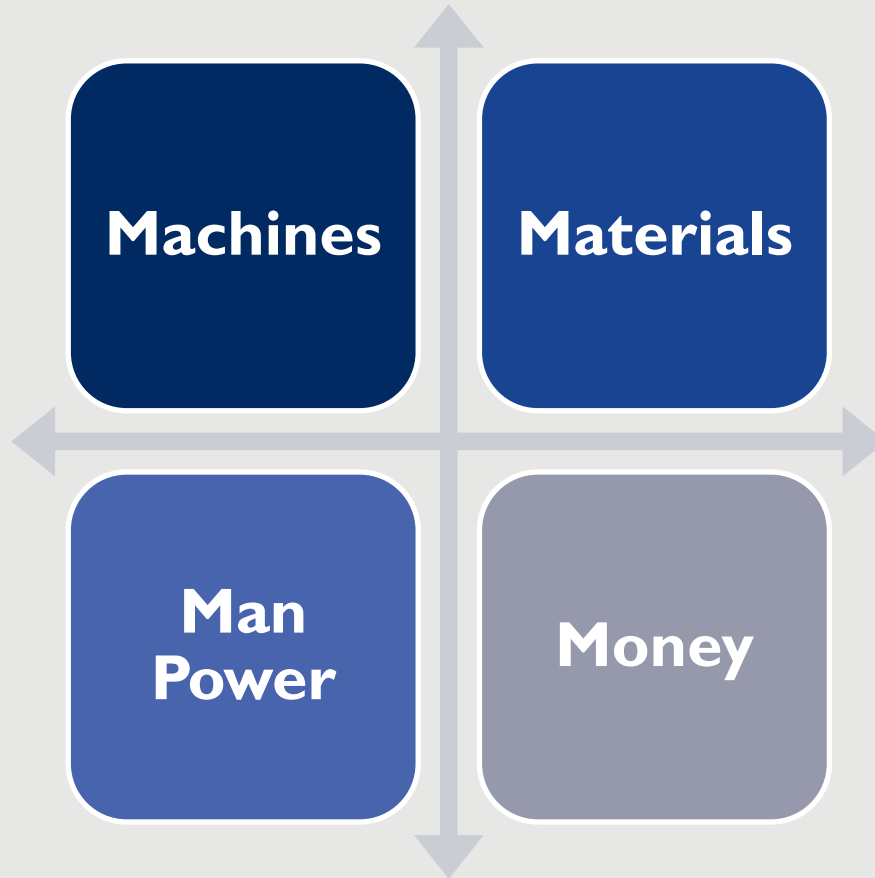
Projection(2023)



DEMAND UNTIL 2030 (PROJECTED IN 2025)

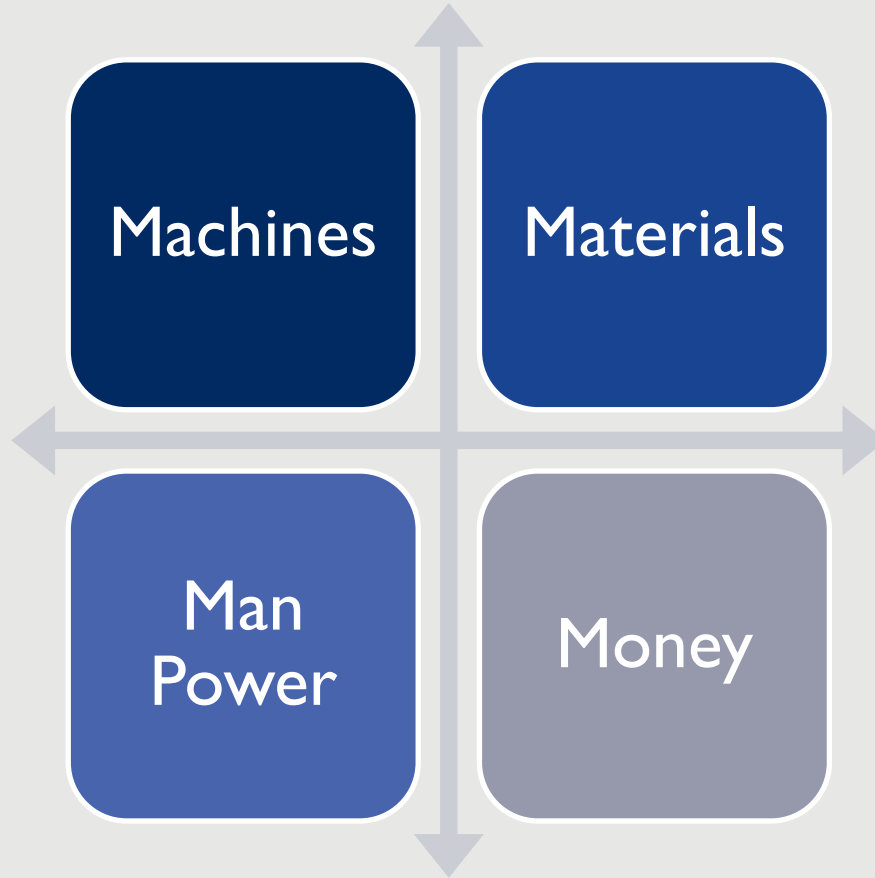


4Ms OF MANUFACTURING



4Ms OF MANUFACTURING

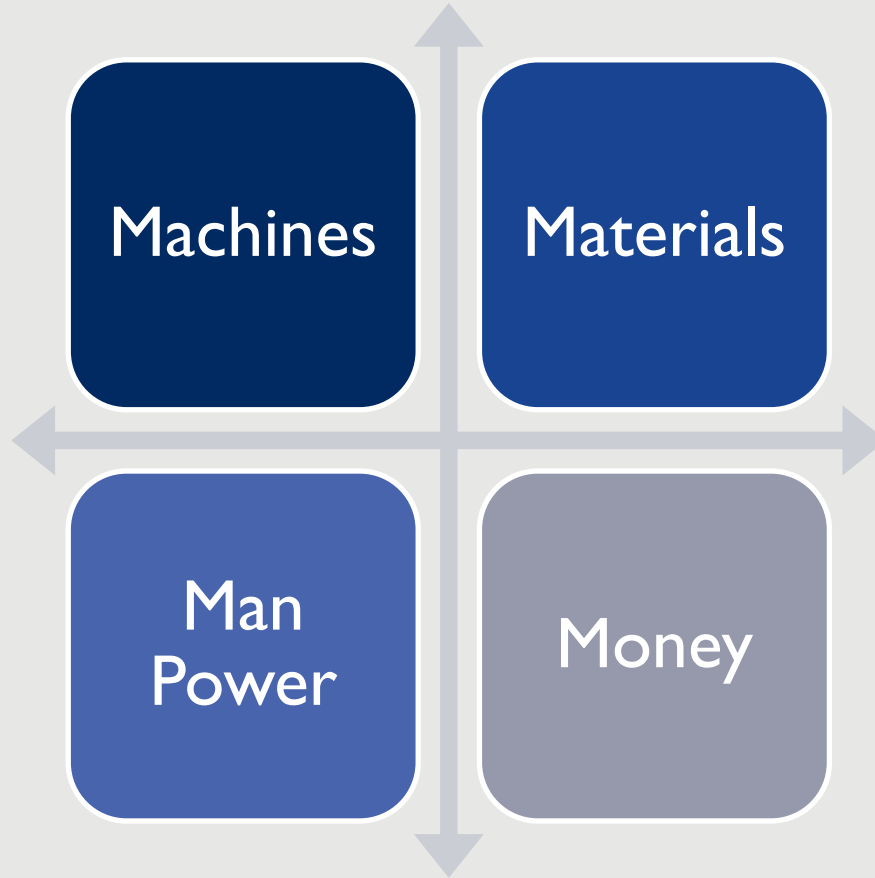
- **100% Dependency on a single country**
- **Pseudo Ban on High tech exports**
- **Low tech options available**
- **Incentives for Modules Everywhere**



4Ms OF MANUFACTURING



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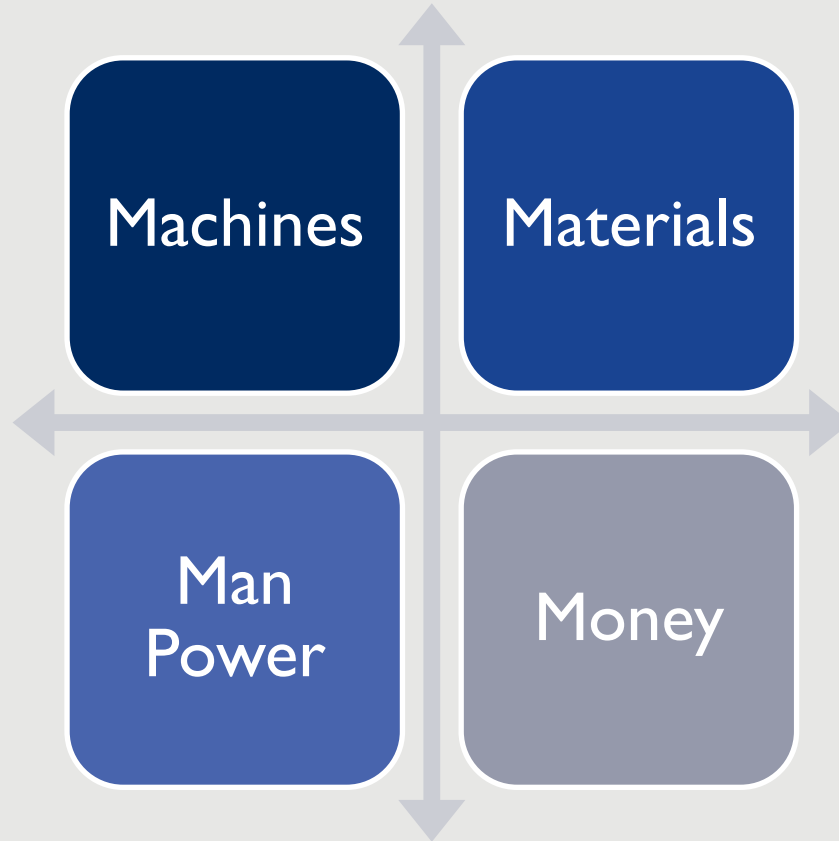


- **Cost of Exploration**
- **Technology availability**
- **Cost Intense Extraction and Processing**

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- **Equipment for training**
- **Trained Trainers availability**



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Machines

Materials

Man Power

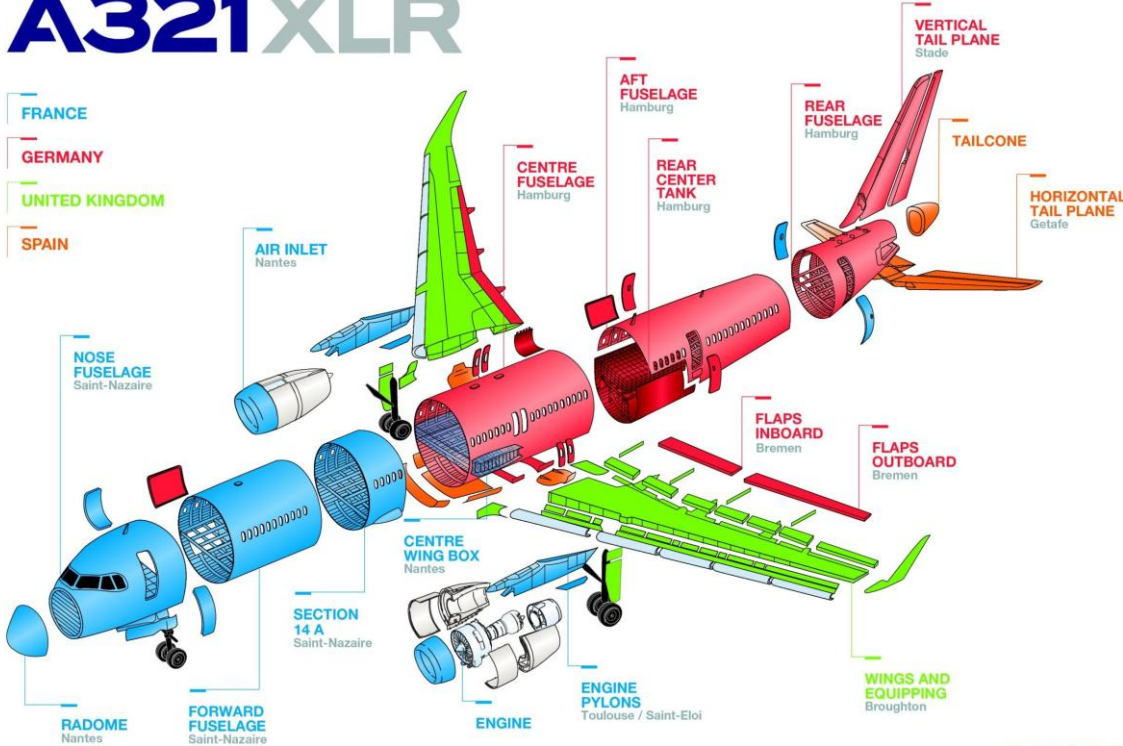
Money

- **Cost of Exploration**
- **Technology availability**
- **Cost Intense Extraction and Processing**

- **Affordable Capital**
- **Support in Upstream**
- **Managing Risks**

WHAT DO WE NEED ?

A321XLR



A350 BUILD ALLOCATION - AIRBUS PLANTS



Way Forward

- **Joint Development**
- **IP sharing**
- **Next Gen technologies**

Machines

Materials

- **Co-exploration**
- **Joint R&D**

- **Standardize trainings**
- **Create a globally accepted mechanism**

**Man
Power**

Money

- **Accessible capital**
- **Sharing risks and rewards**



NSEFI

RE-Imagining Sustainable India

