

# Accelerating Development through LEDS: National and Sub National Approaches

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- **VISION AND ASPIRATIONS**

‘Faster, Sustainable, and More Inclusive Growth’.

The simultaneous achievement of each of these elements is critical for the success of the Plan.

- **MONITORABLE TARGETS FOR THE PLAN**

Twenty-five core indicators across:

*Economic Growth*

*Poverty and Employment*

*Education*

*Health*

*Infrastructure, Including Rural Infrastructure*

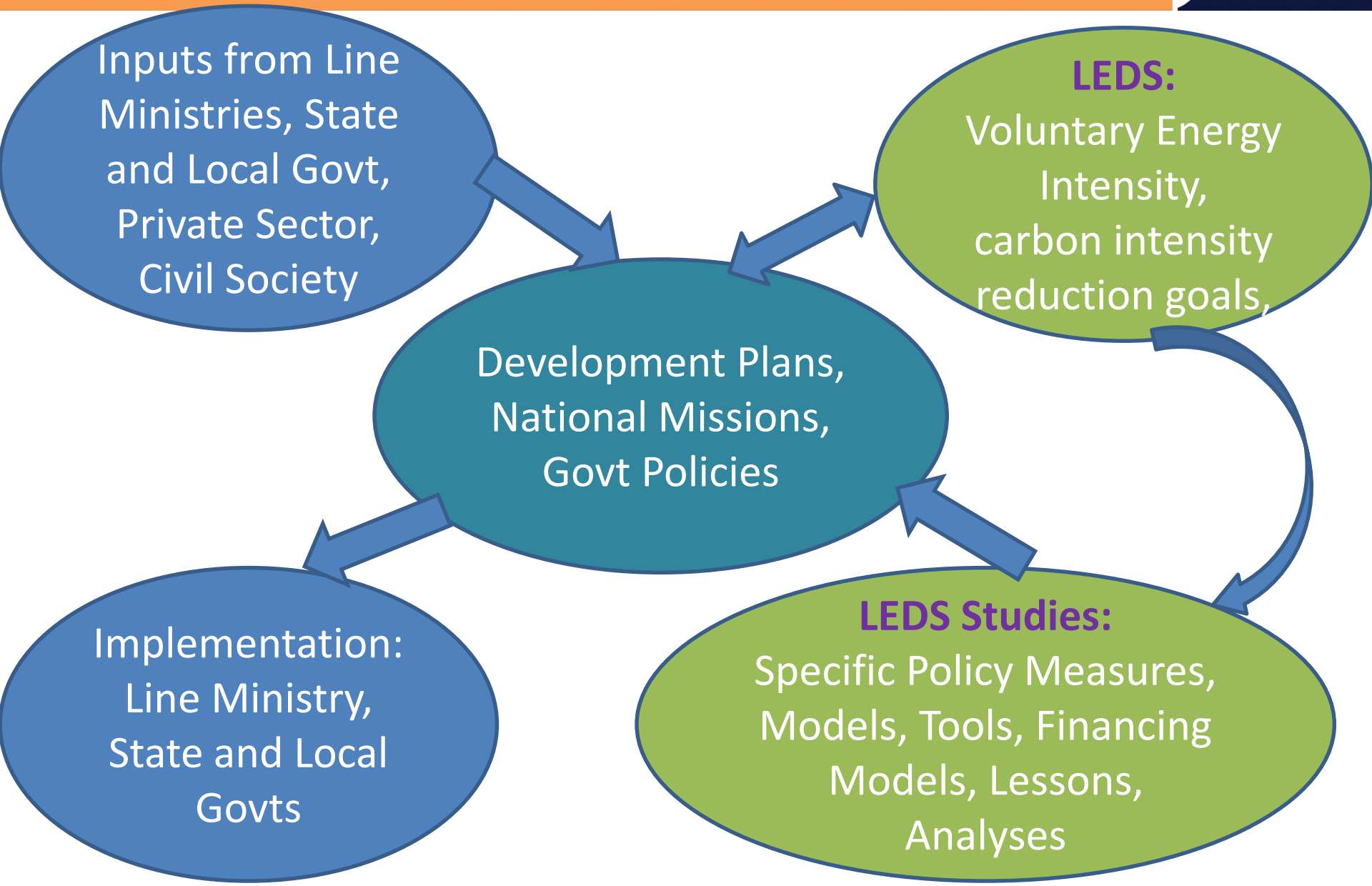
*Environment and Sustainability*

*Service Delivery*

- States are encouraged to set state-specific targets corresponding to the above, taking account of what is the reasonable degree of progress given the initial position.



- **GDP growth** in the Eleventh Plan 2007–08 to 2011–12 was 7.9 per cent
- **Agricultural GDP growth** accelerated in the Eleventh Plan, to an average rate of 3.3 per cent
- The percentage of the population below **the poverty line** declined at the rate of 1.5 percentage points
- The rate of growth of **real consumption per capita** in rural areas in the period 2004–05 to 2011–12 was 3.4 per cent
- The rate of **unemployment** declined from 8.2 per cent in 2004–05 to 6.6 per cent in 2009–10
- **Rural real wages** increased 6.8 per cent per year in the Eleventh Plan (2007–08 to 2011–12)
- Complete **immunization** rate increased by 2.1 ppt per year between 2002–04 and 2007–08
- Net enrolment rate at the **primary education** level rose to a near universal 98.3 per cent in 2009–10





- **Economic Growth**
  - GDP annual growth
  - Primary Energy Projections
  - GDP per capita
  - Energy productivity (GDP PPP \$ per kg OE)
- **Inclusive Development**
  - Rural development, Poverty alleviation, Rural Energy
  - HDI, Co-benefits
  - Energy per capita
  - Emissions per capita
- **Finance**
  - Capital, O&M costs
  - Business models, revenue model
  - ESCOs, Risk Guarantee
  - Financing platforms, incentives, subsidies
  - Investment Grade Monitoring, Reporting and Assessments
- **Resources**
  - Capital
  - Materials
  - Land
  - Water
- **Environment**
  - Material productivity (GDP PPP \$ per Domestic Material Consumption (DMC))
  - Energy, Emissions, Water and Land intensity
- **Energy Security**



- **Line Ministry and Policy Bodies:** Priorities, funding, existing policy
- **Political economy:** existence of coalitions with negative linkages
- **Information** quality, adequacy, legal and administrative support
- **Institutions and HR:** Capability to actually implement in terms of capacity
- Does the instrument create new opportunities for speculation, eg. PAT markets
- **Costs:** Sources of financing can be of three types:
  - Potential for market financing
  - Public-private collaborative structures
  - Requirement for public budgetary finance

**Lessons:** *Data Sources, Analysis Tools, Financing Estimates and Models, inputs from line ministries, consultations with stakeholders.*

**Accelerated Development through LEDS:  
Modeling India's National Energy Policy**



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## Transport

- Passenger Transport
- Freight Transport

## Industry

- Energy Efficiency

## Cooking

- Domestic Cooking
- Commercial Cooking

## Lighting and Appliances

- Residential
- Commercial

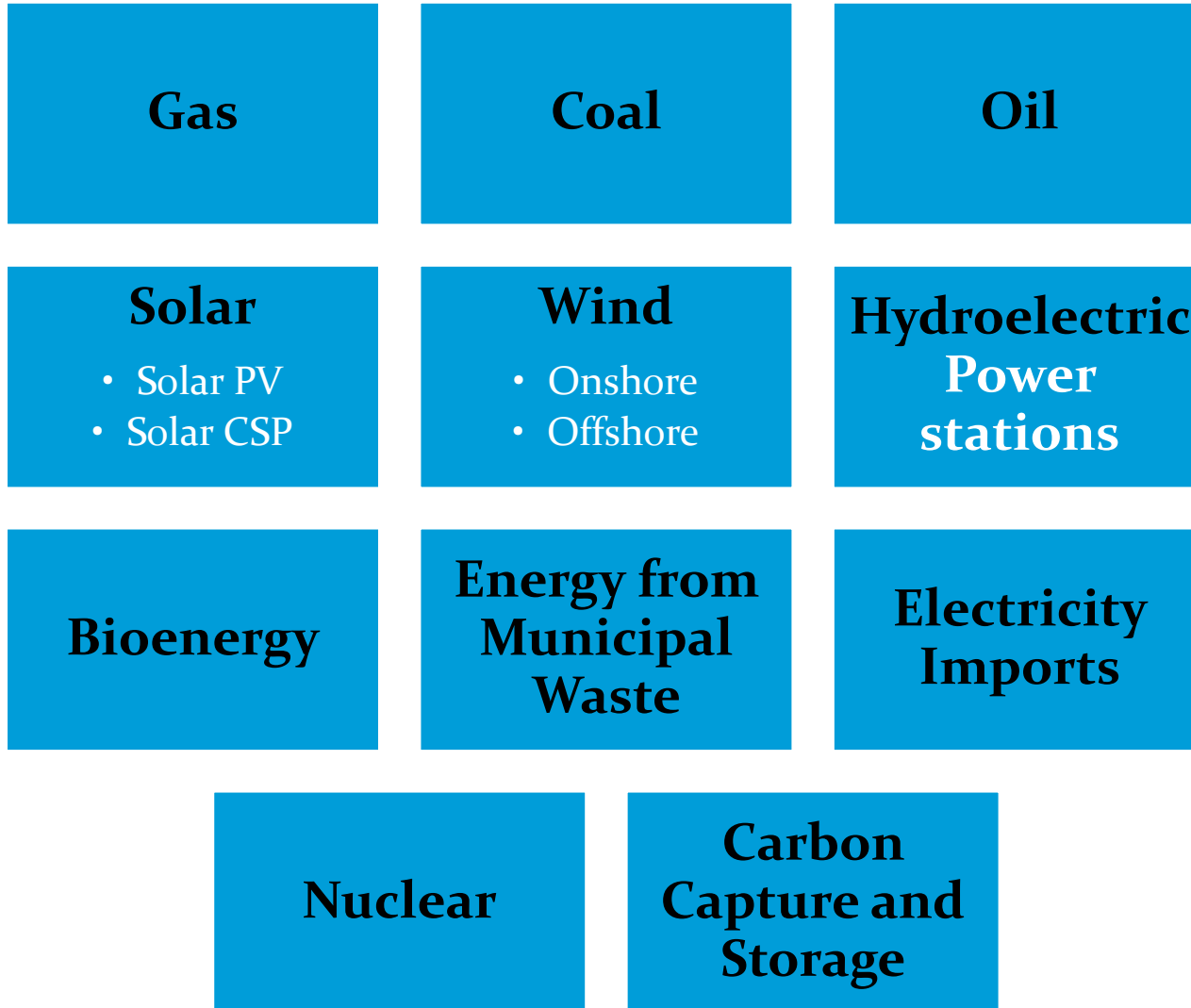
## Agriculture

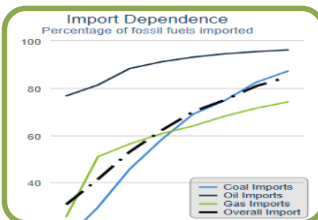
- Mechanization (tractors)
- Pump sets for irrigation

## Replacement of Diesel in Telecom Sector

## Building Envelope and Design Optimization

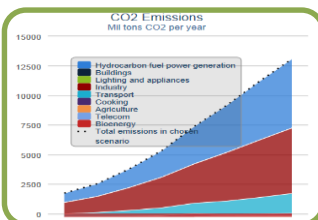






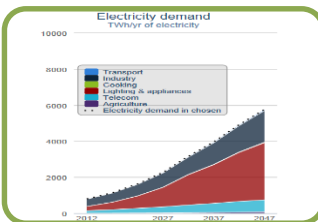
## Energy Security

- Overall import dependence reduces to 21% in the ‘Maximum Energy Security Scenario(Heroic effort in demand sectors)’ from 85% (All Level 1s) in 2047



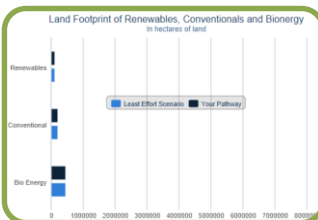
## Emissions

- We achieve 2.7 tones of CO2 per capita in 2047 under ‘Minimum Emissions Scenario’



## Electricity

- 40% reduction in Energy Demand in the year 2047 when we move from Level 1 to Level 4 across all demand and supply sectors.



## Land Area

- ‘Maximum Energy Security Scenario (Determined effort in demand sectors)’ has a land footprint of 105 thousand square kilometers (3% of India’s land area)

**Green Growth, Low Carbon and Climate  
Change-Resilient Development for Karnataka**  
*Experiences and Successes*

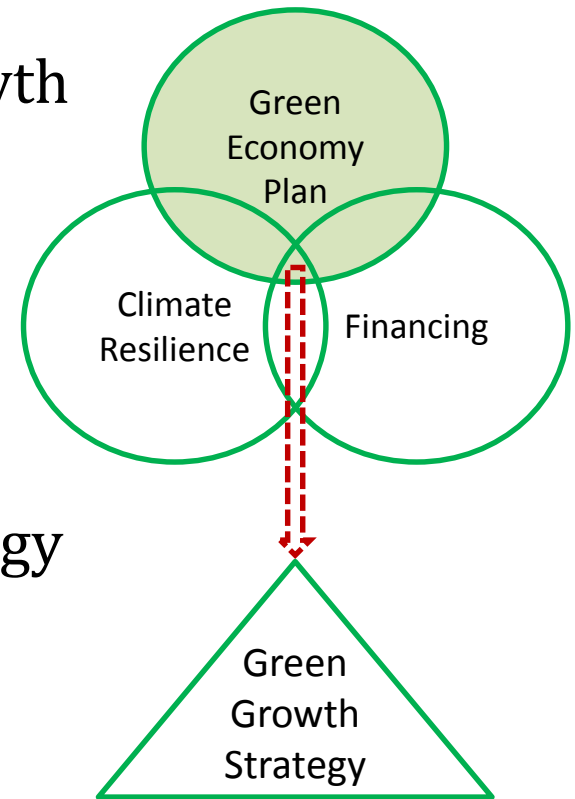
*Dr. Sharath Rao, Shweta Srinivasan, M. Sahil, Nihit Goyal*

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- Multi-disciplinary, collaborative project, consortium of research institutions supported by GGGI
- Key objective: To develop a green growth strategy, including the aims of poverty reduction and sustained economic development for Karnataka
- The project has three main outputs synthesized into a green growth strategy

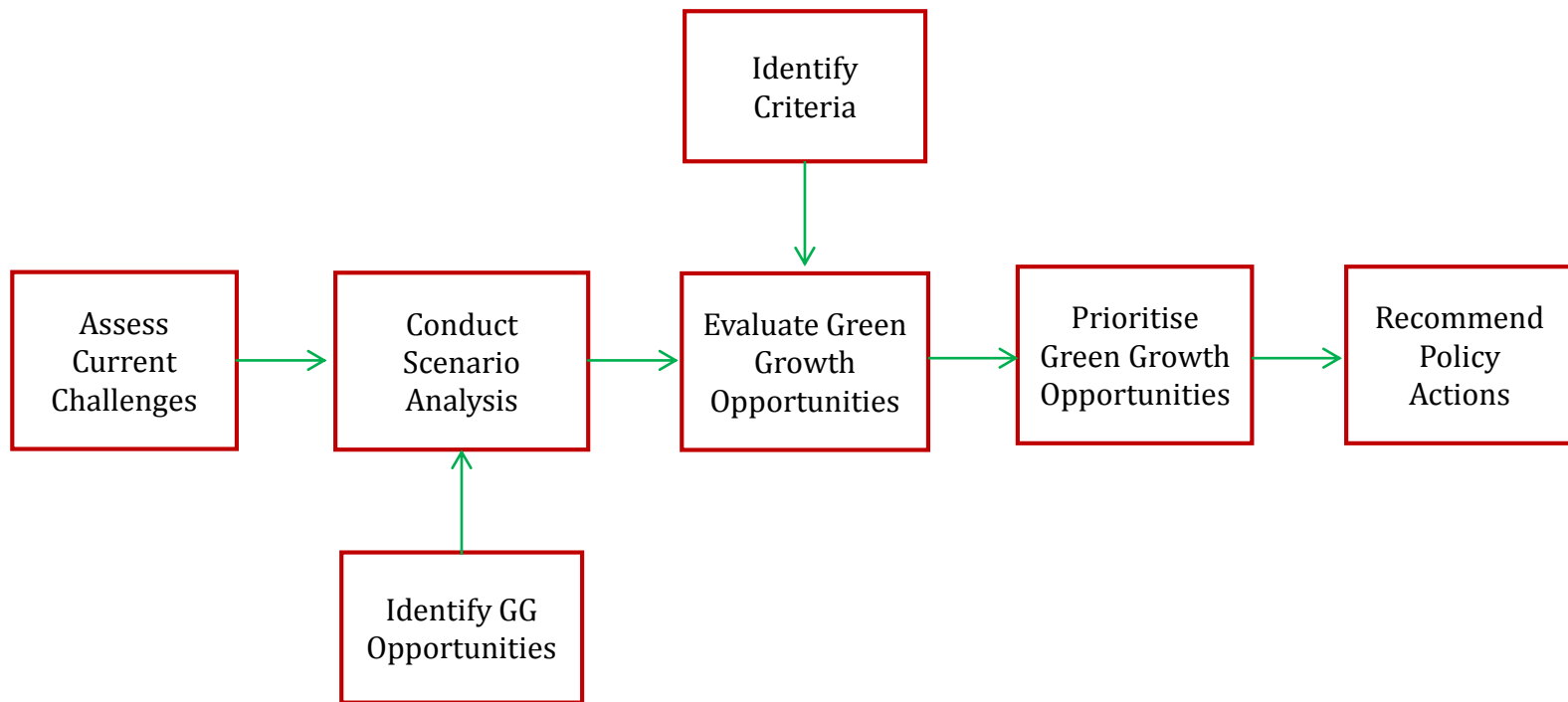




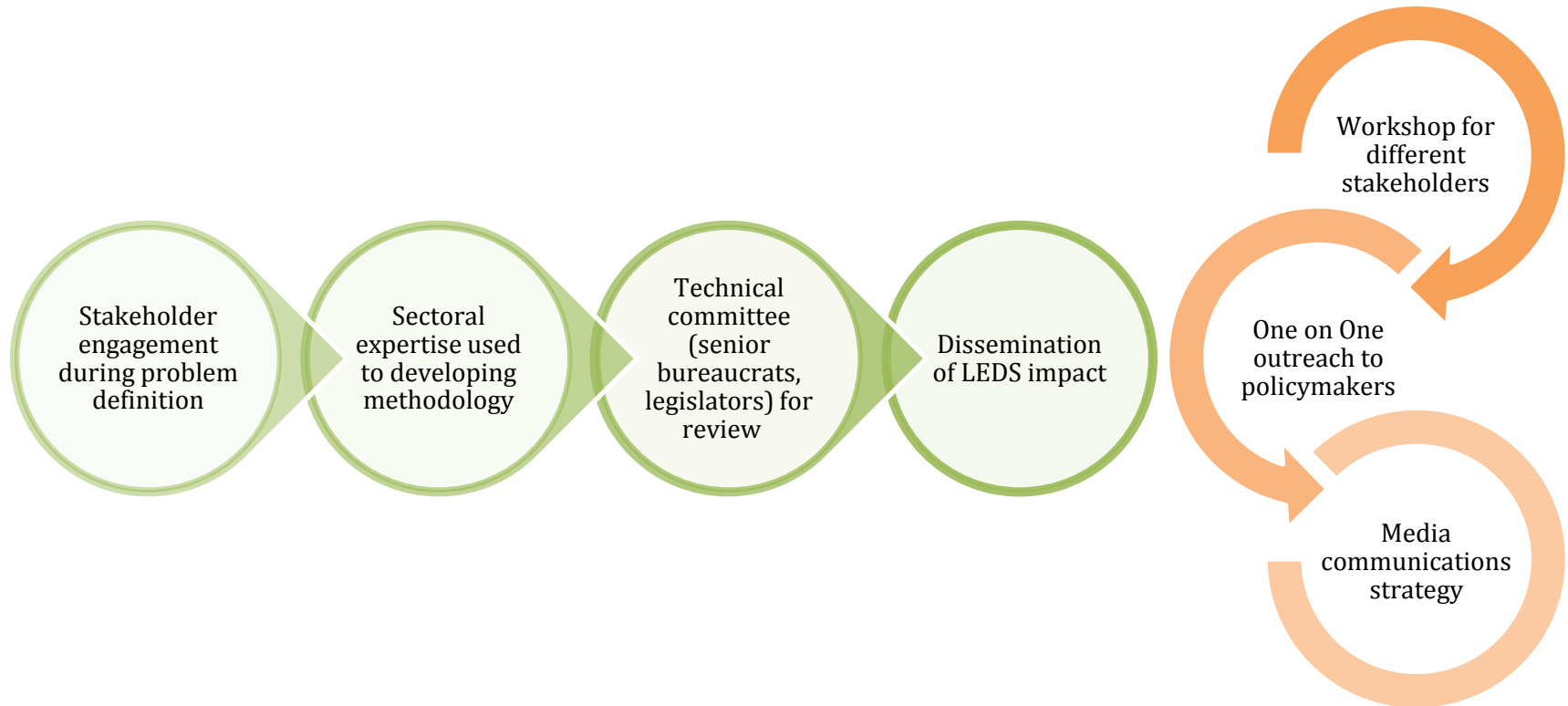
- Estimation of the baseline emission inventory
- Evaluation of sustainability challenges over a long-term horizon (going up to 2030)
- Identification and quantification of green growth co-benefits of mitigation actions
- Assessment and prioritization of feasible low emission strategies

# Framing the issue to convey the impact of LEDS

- Understanding *Green Growth* as meeting allied developmental imperatives of economic growth, low carbon growth, poverty reduction, along with natural resource sustainability
- Mapping out the constraints to growth under current policy architecture over a long term horizon (BAU)
- Identifying and assessing co-benefits such as impact on resource or energy availability and local environment degradation
- Analysing impact of LEDS on alleviating sustainability challenges with detailed sectoral analysis in Power (Demand and Supply), Industry, Transport and Waste
- Identifying and prioritising key green growth opportunities

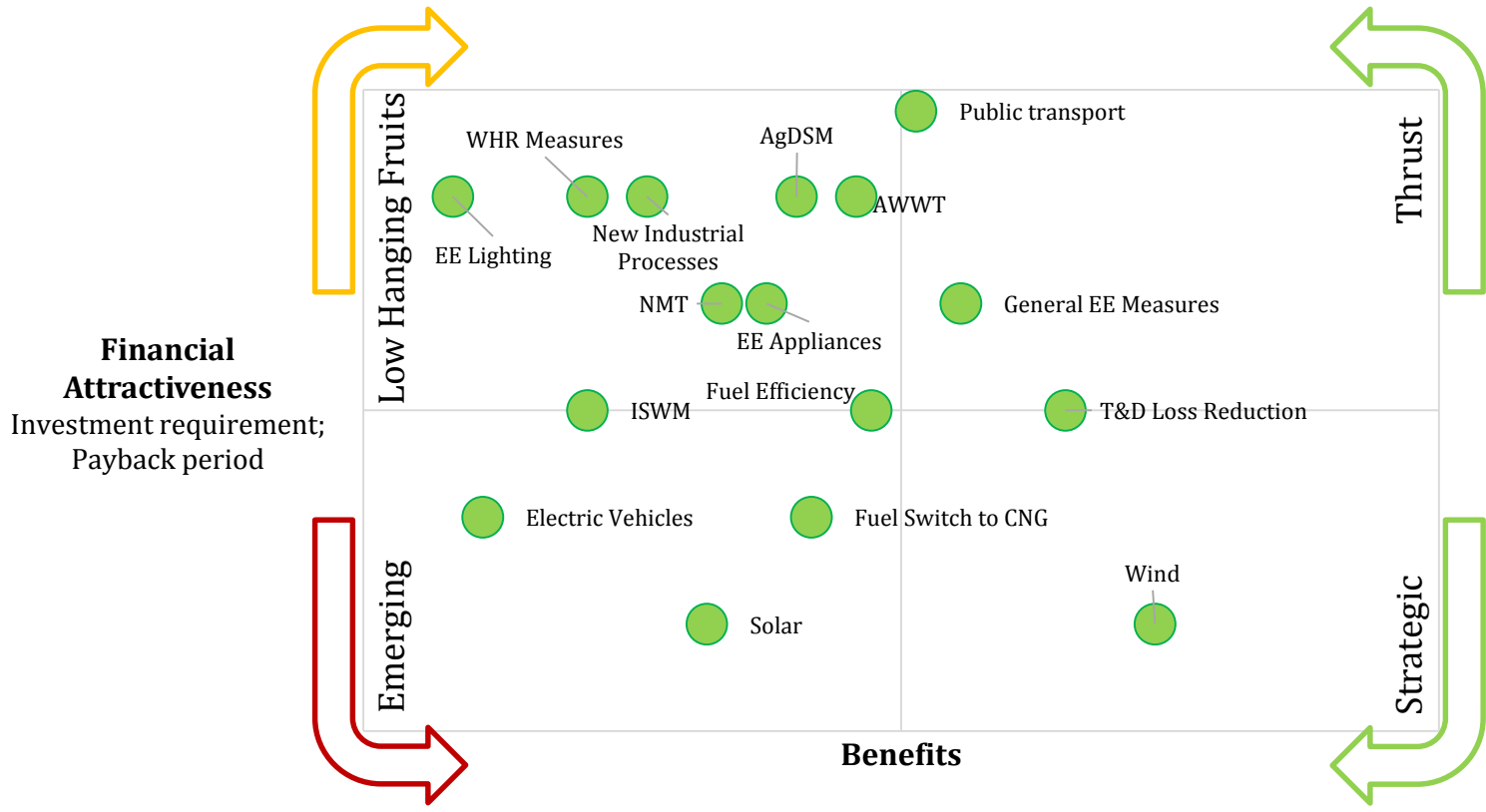


# Approach for stakeholder engagement





# Prioritisation of LEDS options



(Non-Financial) Economic Benefits

*Additional direct job creation; Reduction in fossil fuel dependency; Congestion*

Local Environment Benefits

*Reduction in air pollution; Reduction in land and water degradation*

Social Benefits

*Impact on social equity; Improved access to goods and services*

Mitigation Benefit

*Reduction in GHG emissions*



- Modelling complexity
  - An energy system model enables analysis of impact of behavior, technology and policy
- Data challenges
  - Can be overcome by engaging experts and reasonable assumptions
- Understanding co-benefits better
  - Energy system analysis can be enriched with complementary tools or by expanding resource impact analysis to other sectors

- Framing and messaging is crucial and should be iterative
  - The co-benefits approach hits the right nerve with politicians, policy makers and the general public
- Constant interaction with policy makers helps with buy in
- Stakeholder engagement forces policy makers from different 'silos'/departments to interact and examine problems jointly



- **Development is the top priority**
- **Food, Shelter, Clothing, Health, Roads, Education, Information, Clean Environment, Security**
- **Sustainable development can be a lower cost option in the long term**
- **LEDS is a key pathway to sustainable development**
  - A robust integrated methodology for linking LEDS with national development process is crucial
  - Multiple stakeholders (Planning Commission, Line Ministries, State governments, Local governments, corporate entities, individuals, society, environment)
  - Financing models, sources and quantum of investment is critical to the process
  - Prioritization is essential for successful implementation
  - **Tools for qualitative and quantitative analysis and visualization of benefit metrics**
  - Careful analysis of inter-linkages, intra-sector and inter-sector
- **National, Regional and Global sharing of knowledge with LEDS policy makers**
- **LEDS is a key platform for collaboration on lessons, methodology, tools, outcomes**



**LEDS (GP, ALP, WGs)**

**Thank You**

