SHAKTI SUSTAINABLE ENERGY FOUNDATION

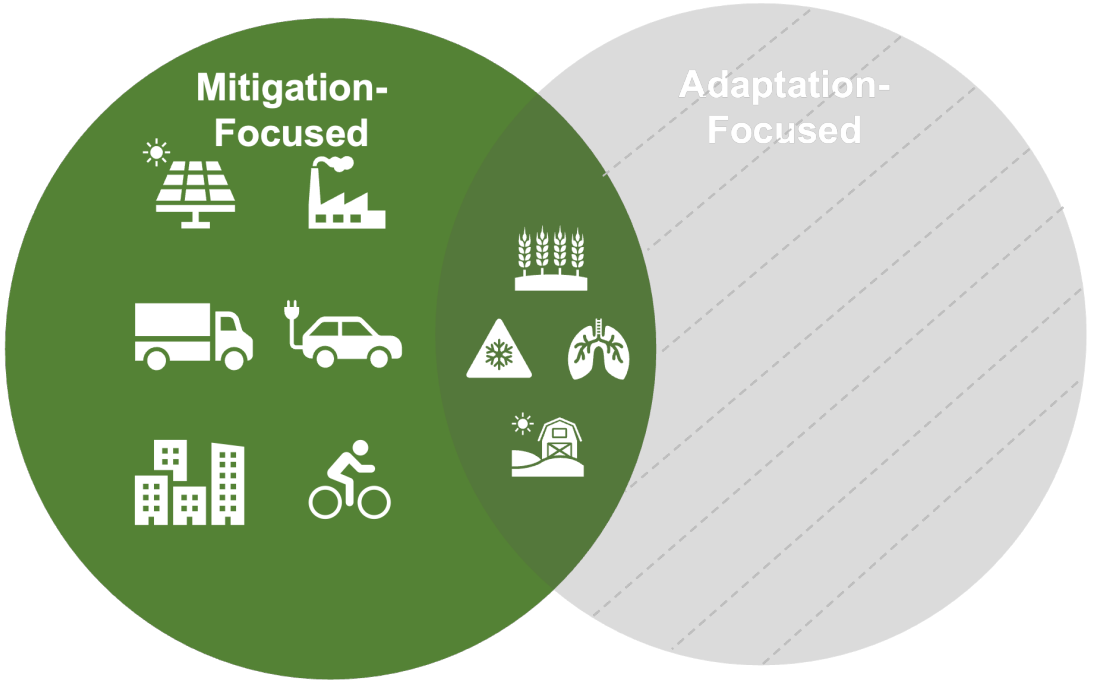
Annual Work Plan

2023-2024

Our programmatic approach seeks to support India's Net Zero transition by focusing on sectors that have a high potential to reduce greenhouse gas emissions while also supporting India's economic growth and development.

Mitigation

- High RE Pathways
- Industrial Decarbonization
- Buildings Decarbonization
- Sustainable Transport and Electric Mobility



Mitigation & Resilience

- Zero Emissions People and Planet Positive Agriculture and Land Use
- Energy Access for Development
- Air Quality
- Clean Cooling

Cross-Sectoral Programs

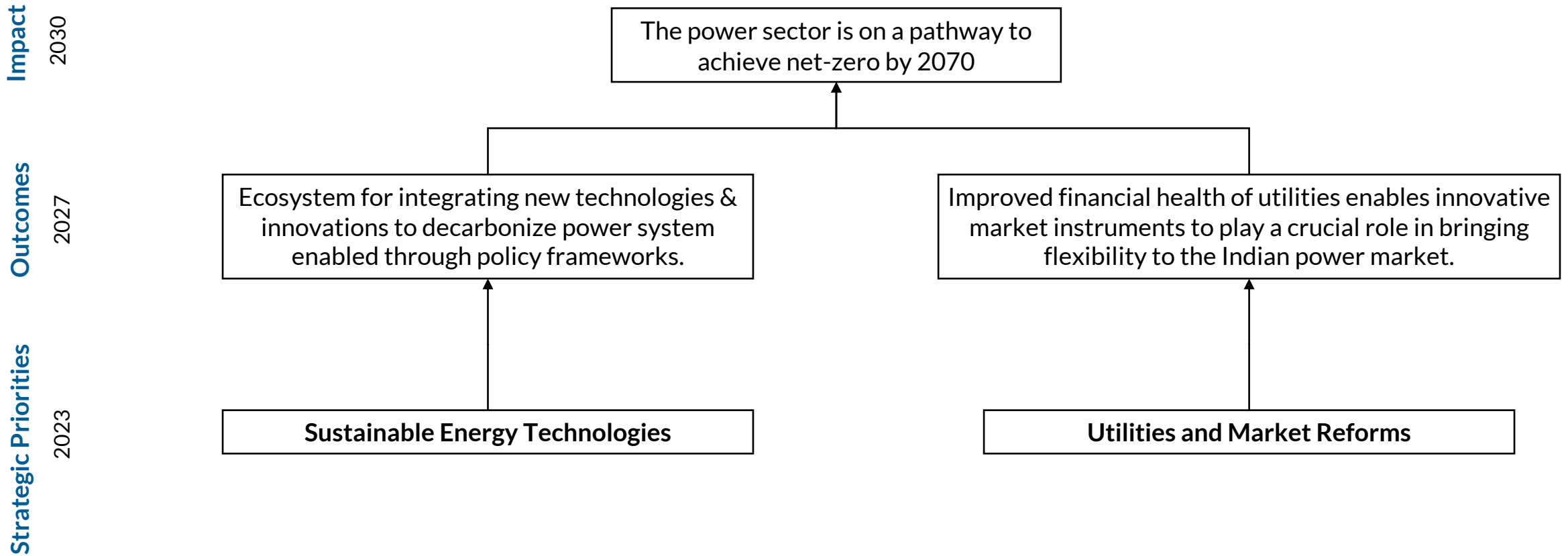
- Modelling Long-Term Net Zero Pathways
- State-Level Climate Action
- Climate Finance & Carbon Markets
- Cities & Climate Action
- Critical Raw Materials & Supply Chains

Work-Planning Process

- Expert stakeholder discussions conducted with sectoral experts from late-January to early-February.
- Internal deliberations and prioritization of strategic approaches.
- Discussions with leadership team to finalize strategic approach.
- Workplan for the year developed.

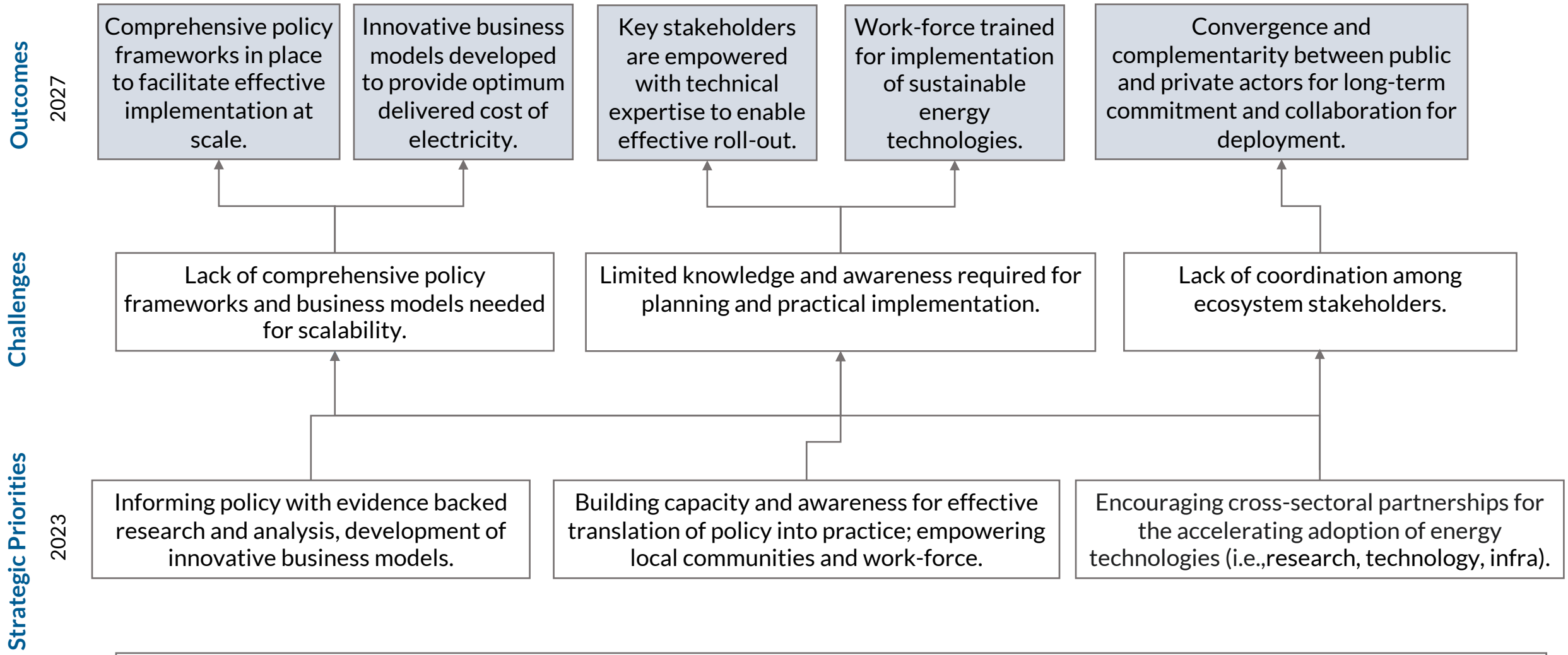
High Renewable Energy Pathways

Accelerating clean energy transition through deployment of sustainable energy technologies and electricity-market reforms.



(These strategic priorities are further elaborated in the slides that follow.)

Sustainable Energy Technologies



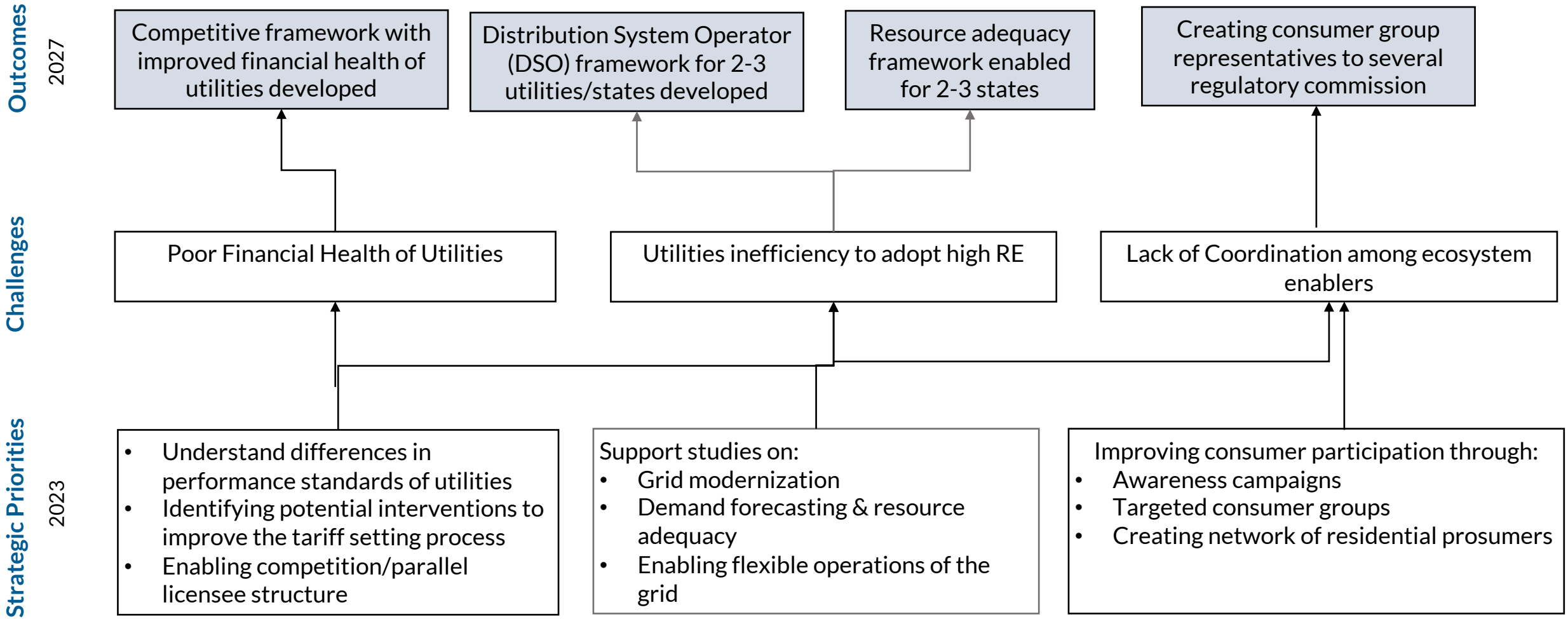
Note: Emerging RE technologies to achieve 500 GW RE by 2030 (Shakti Priority)-
Offshore Wind, Green Hydrogen, Energy Storage technologies, Geothermal Energy, Carbon Capture, Utilization and Storage Technologies.

Sustainable Energy Technologies

Key Activities (2023)

- Review existing policies, research documents and prevailing business models in India. Ascertain maturity level/ gaps in policy as compared to other geographies and provide practical recommendations to the decision-makers.
- Development of strategic action plan and roadmaps for the emerging sustainable energy technologies.
- Building technical-capacity of ecosystem actors, local communities and stakeholders involved.
- Identifying means to close delivery risks and improve economic viability of new technologies.
- Development of the cost-curves for new technologies across end use applications/sectors.
- Frameworks to identify potential synergies for fostering collaboration among ecosystem enablers (i.e., dialogues, convenings, joint research-papers etc.)

Utilities and Power Market Reforms

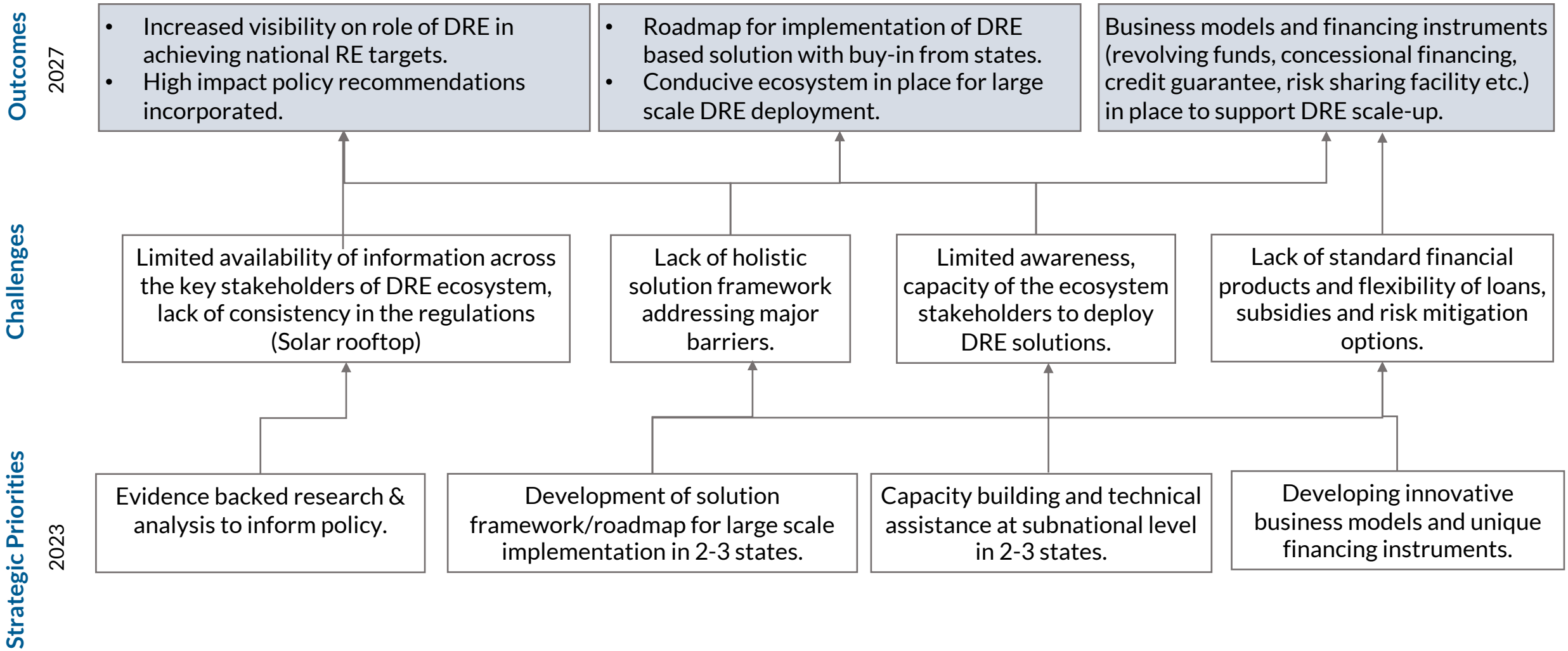


Utilities and Power Market Reforms

Key Activities for 2023

- Measures to understand tariff setting process and evaluate tariff rationalization for various category of consumers at pan-India level.
- Detailed demand forecasting studies with load-following generation and management solutions.
- Grid modernization assessment like underground transmission lines.
- Developing framework for establishment of Distribution System Operators (DSOs) at state-level.
- Developing consumer-centric approaches and improving consumer participation in tariff setting processes.
- Bringing in flexibility in the Indian Power System; Resource Adequacy, RE + Storage + Demand Side Management.
- Developing frameworks for new market products for the India Power Markets.

DRE for Development



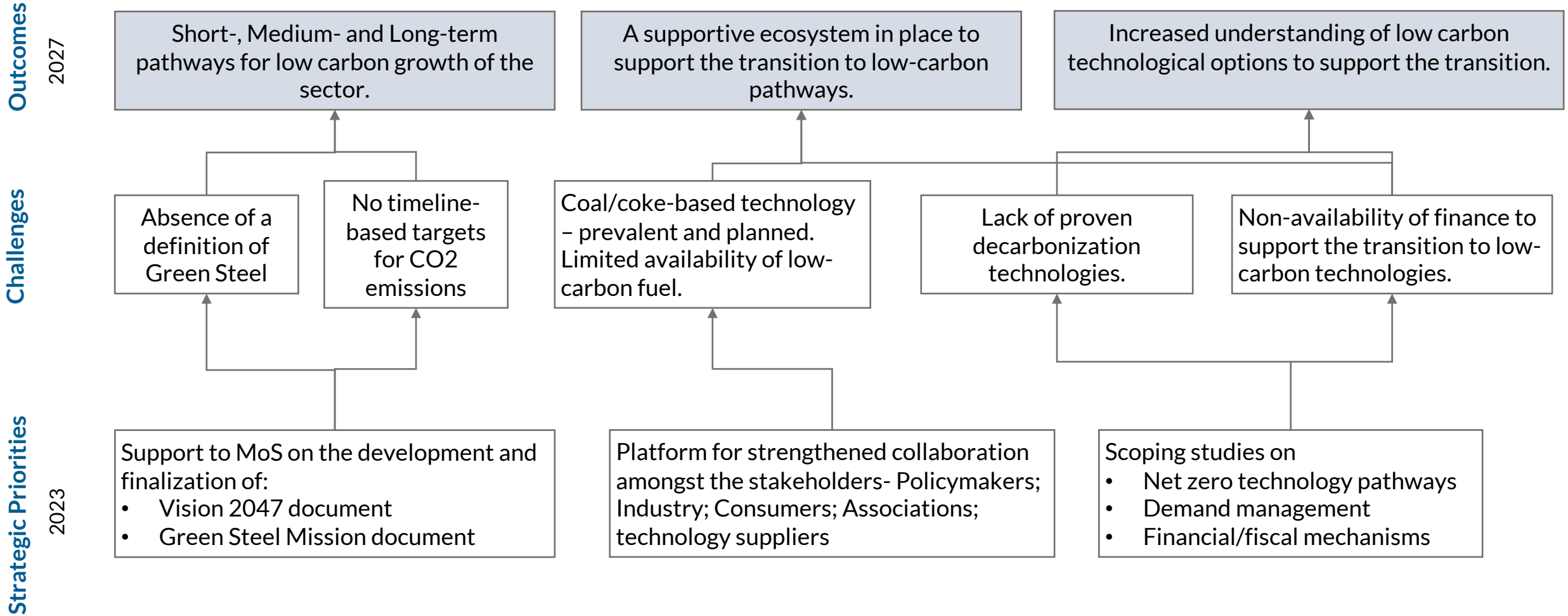
DRE for Development

Key Activities for 2023

- Baselining assessments of DRE for electrification to provide reliable energy access.
- Assessment of the role of selected DRE technologies for livelihood generation and economic prosperity.
- Develop a knowledge repository to achieve data symmetry for easy access of data- a tool to be developed to identify the demand and market assessment for specific technologies.
- Frameworks for standardization of RE-based livelihood applications based on the market readiness and making the products ready to use for the targeted market (State-specific focus).
- Development of the solution framework for DRE-powered livelihood and rooftop deployment in residential as well as industrial segment (focus on SME).
- Development of solution framework for strengthening the implementation of Kusum Scheme.

Industrial Decarbonization

(Focus Sector- Steel)



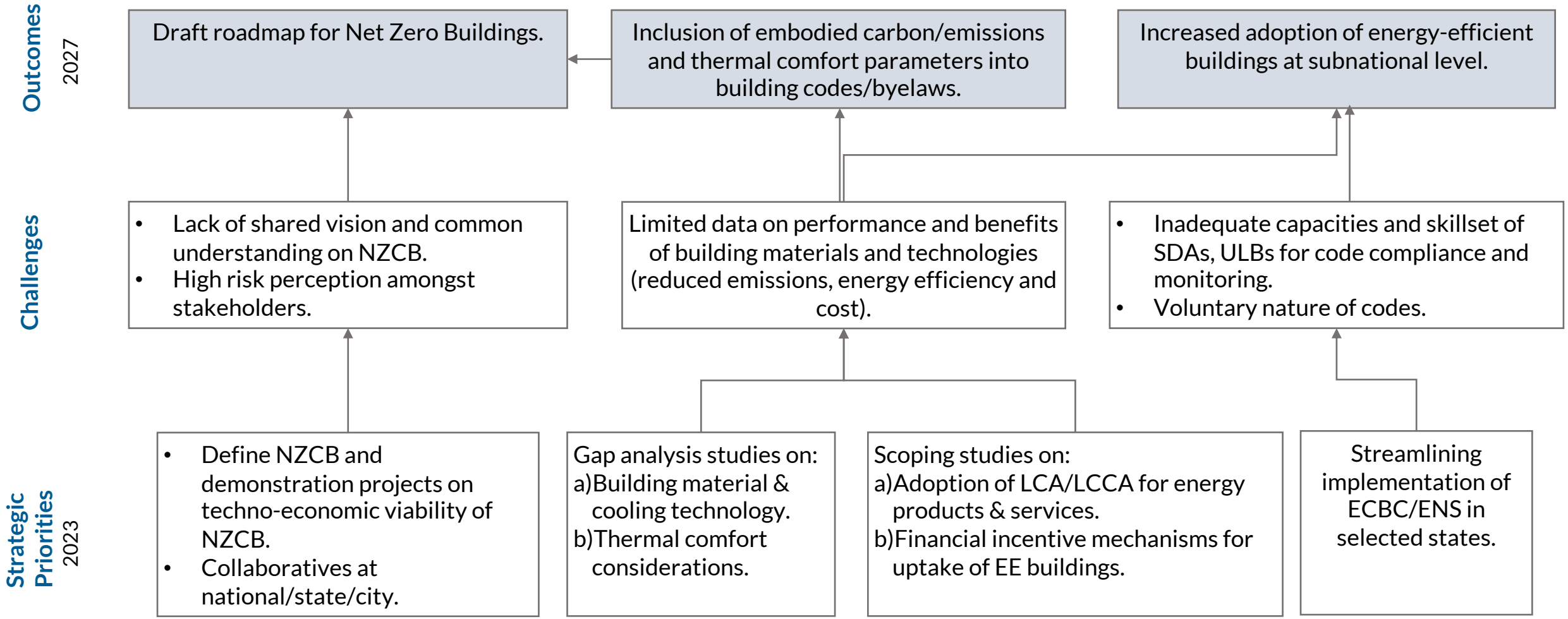
Industrial Decarbonization

(Focus Sector- Steel)

Key Activities for 2023

- Continue providing support to MoS – Green Steel Mission.
- Feasibility studies on (i) clean transition options – CCUS, Hydrogen use, demand management etc.
- Support setting up a common platform for Government, International and domestic industry(Integrated, Secondary Steel and MSMEs), Technology suppliers for knowledge sharing.

Building Decarbonization

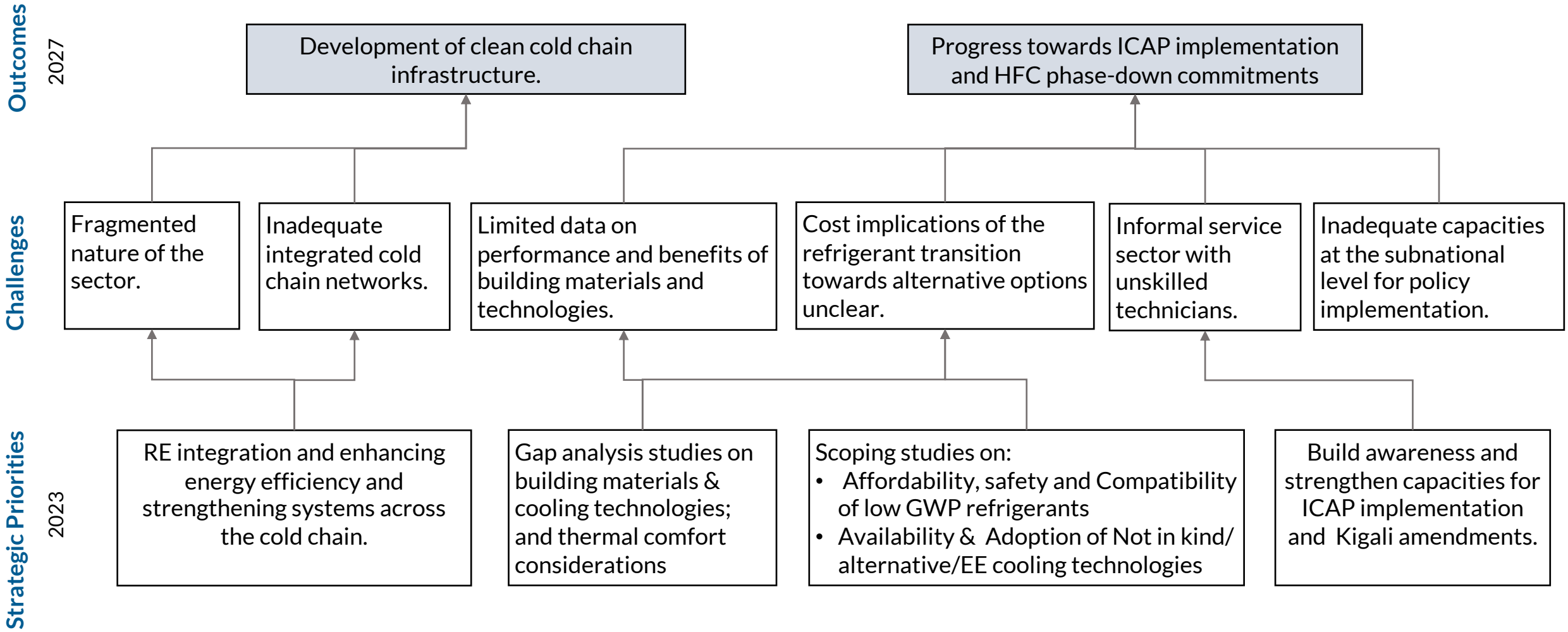


Building Decarbonization

Key Activities for 2023

- Defining net zero and deep retrofit taxonomies and disclosure processes.
- Assessment framework/ technical data/energy performance data on low-carbon building materials and space cooling technologies.
- Demonstration Projects: LCA assessment for NZC buildings.
- Implementation of existing building energy codes at the subnational level; financial models for scale-up.
- Creating supply-side shifts through consumer awareness generation.

Clean Cooling

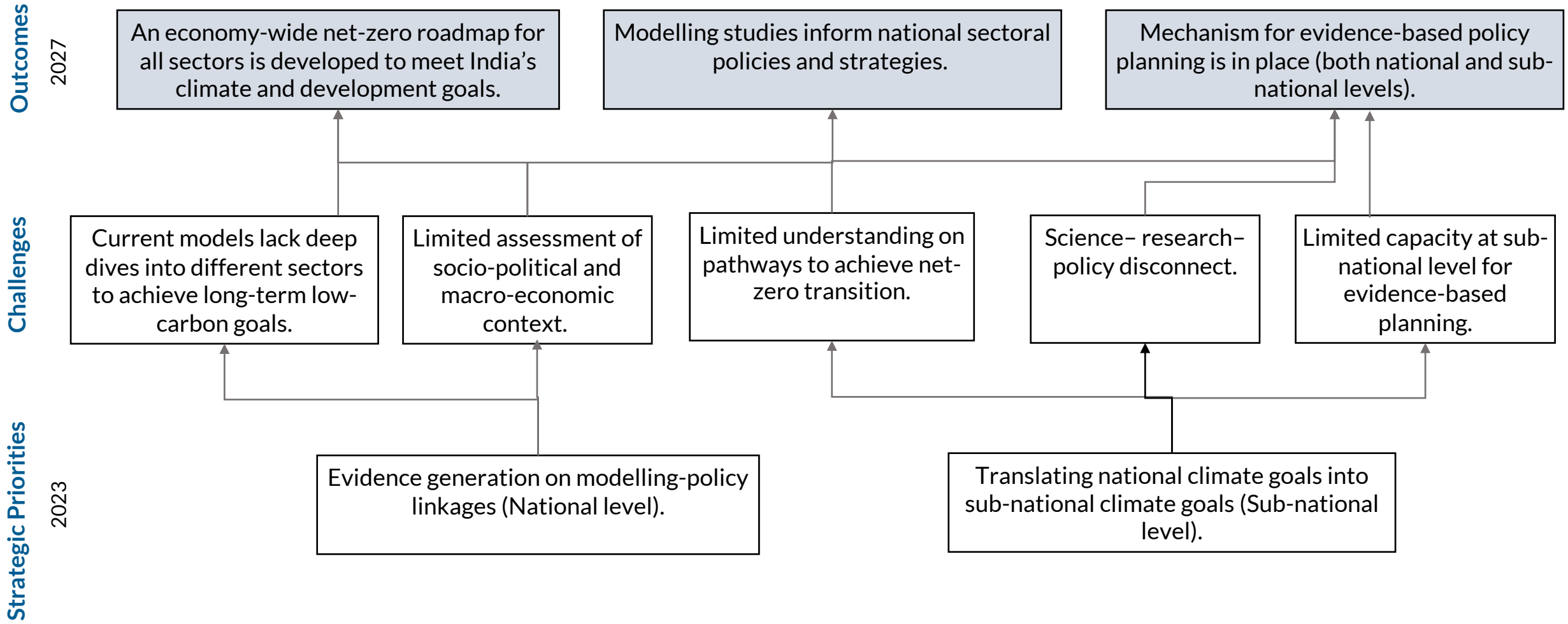


Clean Cooling

Key Activities for 2023

- Identification of viable business models for selected interventions in achieving sustainable integrated cold chain network.
- Streamlining implementation of residential and commercial building energy codes, guidelines and standards at the national and sub-national level.
- Knowledge-sharing platform for industry participation in reducing cooling demand and refrigerant transition.
- Development of trained service technicians.
- Support phase down of HFC, develop understanding on NIK/alternative/EE cooling technologies.

Long-term Modelling Pathways



Long-term Modelling Pathways

Key Activities for 2023

Develop sectoral roadmap in line with India's net-zero target

- Build understanding of net-zero pathways and its socio-economic implications.
- Conduct sectoral modeling studies and identify inter-sectoral linkages.
- Improve data accessibility.

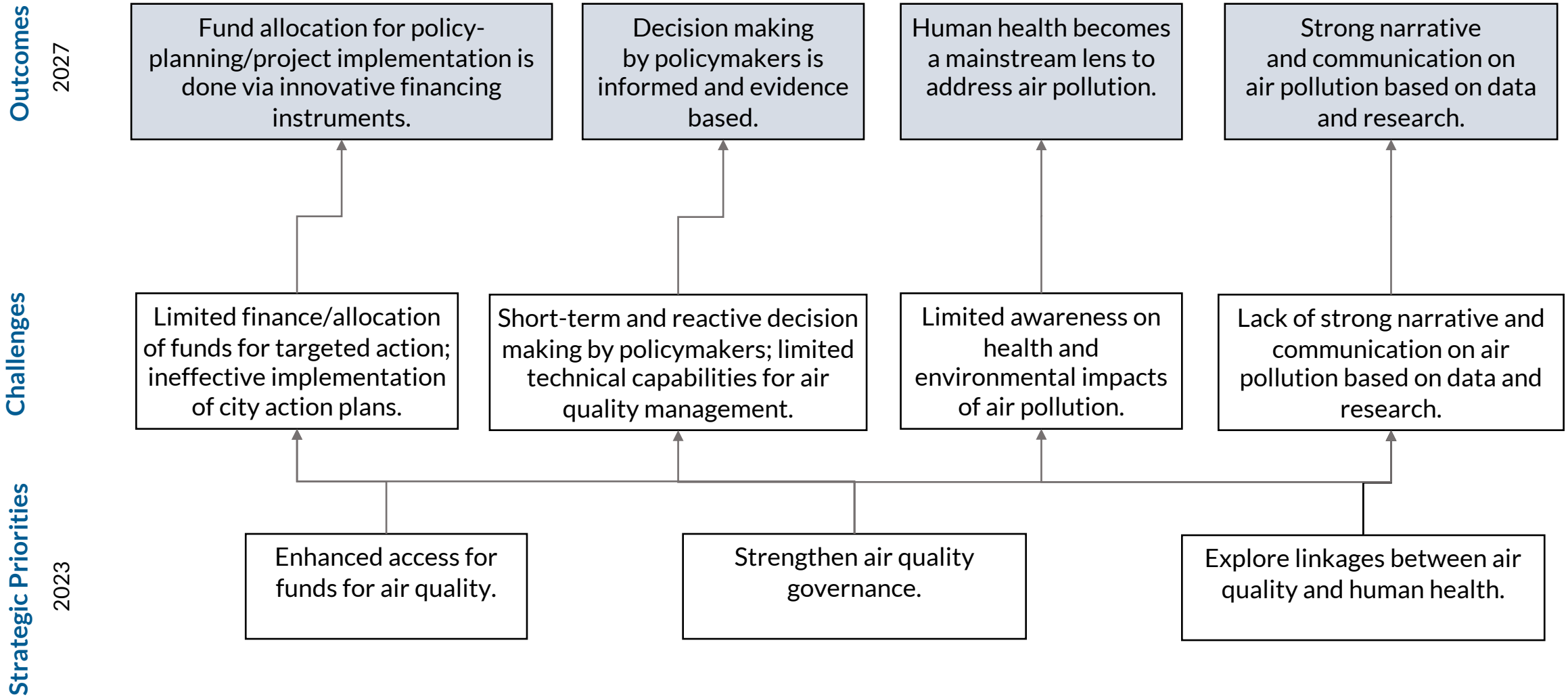
Build modelling capacities

- Strengthen capacities of research scholars from academic institutions at sub-national level on application and interpretation of models to inform policies.
- Create knowledge sharing platform/ climate dialogues to enable cross-learning amongst states.

Assess Net-zero goals at the subnational level

- Develop GHG inventory and Net-Zero sectoral planning.
- Develop climate budgeting.

Air Quality

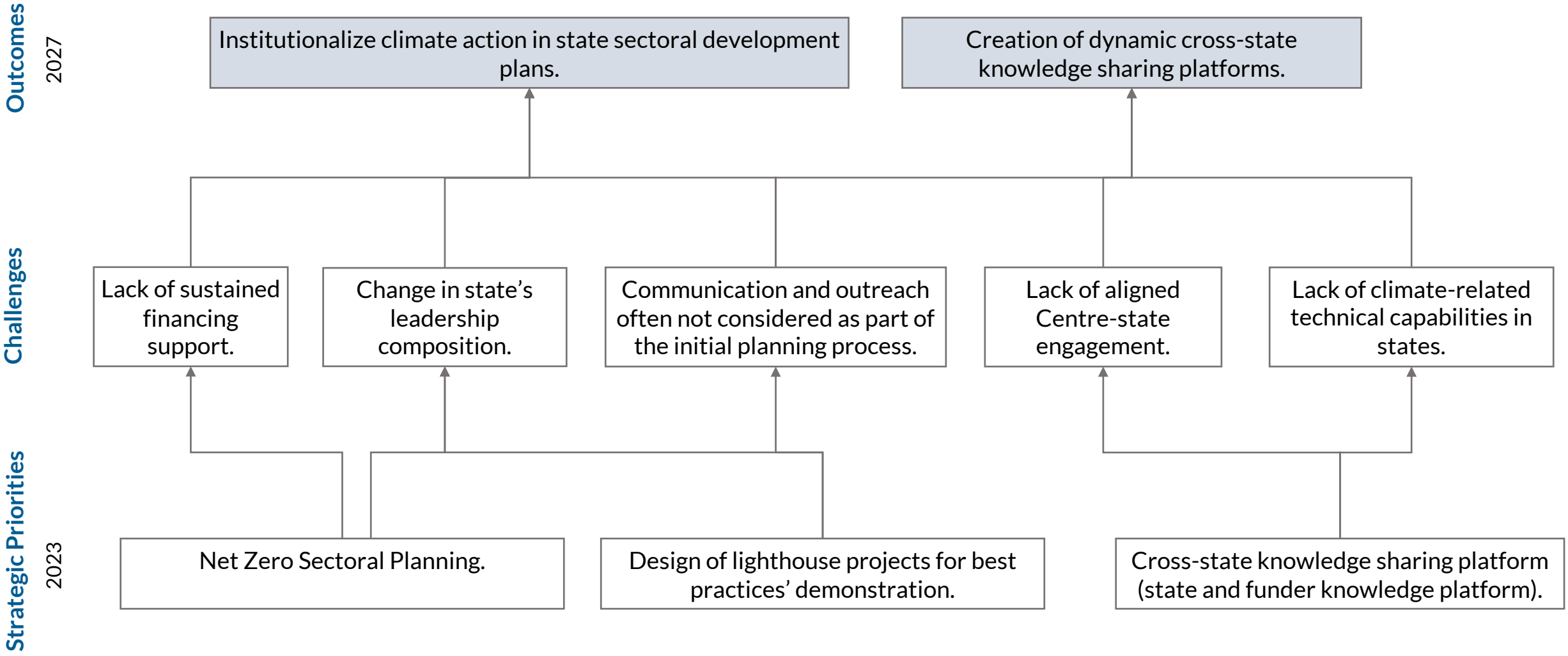

Outcomes
2027
Fund allocation for policy-planning/project implementation is done via innovative financing instruments.
Decision making by policymakers is informed and evidence based.
Human health becomes a mainstream lens to address air pollution.
Strong narrative and communication on air pollution based on data and research.
Challenges
Limited finance/allocation of funds for targeted action; ineffective implementation of city action plans.
Short-term and reactive decision making by policymakers; limited technical capabilities for air quality management.
Limited awareness on health and environmental impacts of air pollution.
Lack of strong narrative and communication on air pollution based on data and research.
Strategic Priorities
2023
Enhanced access for funds for air quality.
Strengthen air quality governance.
Explore linkages between air quality and human health.

Air Quality

Key Activities for 2023

- Write-shops for key stakeholders to facilitate easy access of funds for air pollution mitigation.
- Modelling to estimate social cost of air pollution.

State-Level Climate Action



State-Level Climate Action

Key Activities for 2023

- Net-zero strategic plans for Bihar and Tamil Nadu.
- Development of detailed project reports for subnational lighthouse projects.
- An investment potential study to identify state's existing climate funding landscaping and its technical capacity to implement climate change projects.
- Peer to peer learning platform for states, bilateral, multilateral, private and domestic philanthropy to share best practices and designing larger and impactful projects (green company, lighthouse projects etc.)

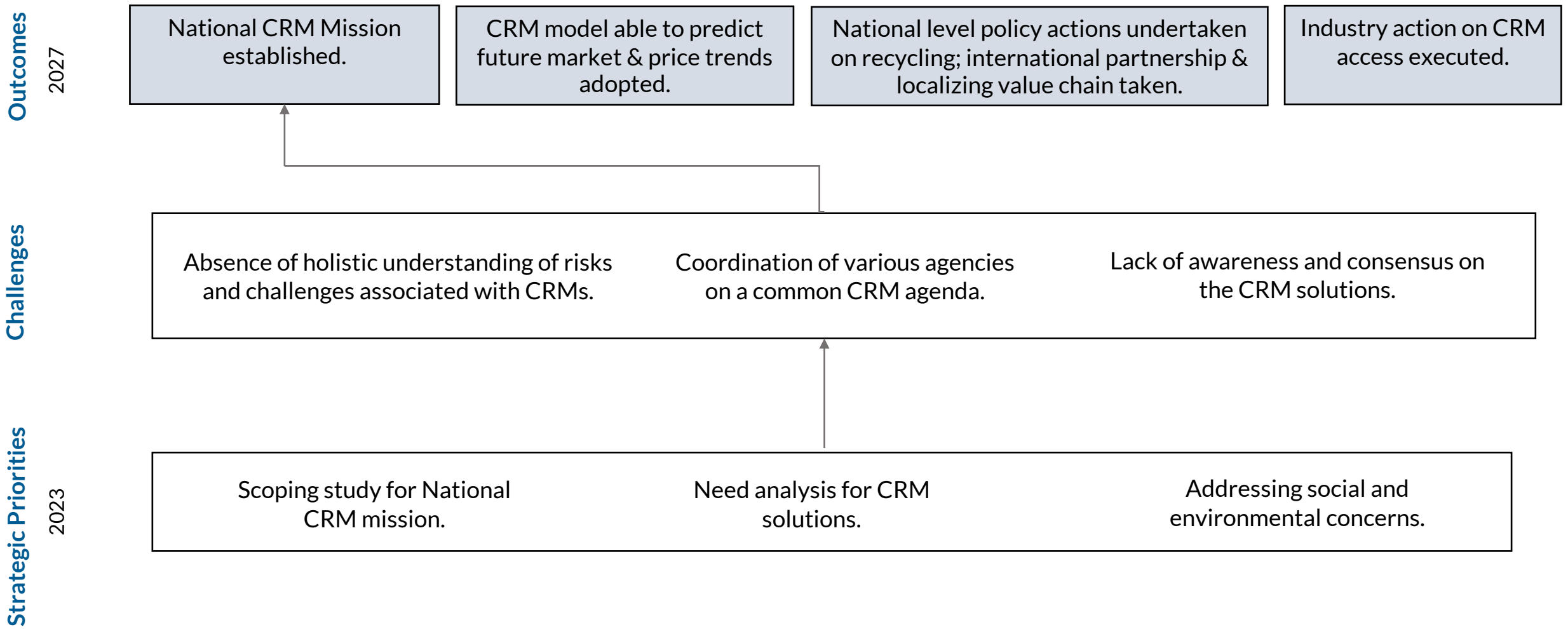
Cities and Climate Action

Outcomes	2026	Institutional mandates for city climate action (CA) & Climate action plans (CAP) created	Sectoral (Building, Transport, Waste) climate action policy/City Climate Action plan (CAP) /Implementation plan adopted by city	Measures to ensure equity and participative justice are adopted by cities.
Challenges		City/state leadership & political economy is not invested in city climate action Pathways to Institutionalize CA & CAPs are not known Institutional mandates are missing	Sectoral: City/local level strategies to reduce emissions are not well understood by stakeholders CAP implementation is hampered by the limited coordination at the city level	Issues of equity arising from climate action for various sectors (buildings, transport, waste) are not entirely known Mechanism to deliver equity and participative justice are not understood and institutionalized Limited evidence on vulnerability of local stakeholders to climate risks.
Strategic Priorities	2023	Develop framework and draft to institutionalize CA & CAPs Raise awareness of the political economy on the need for CA & Institutional mandates	Explore new finance venues Provide co-ordination and climate capacity to cities to implement CAPS	Identify, assess and test mechanisms Identify equity issues & assess vulnerabilities

Cities and Climate Action

- Raise awareness of the political economy on need for institutional mandates for climate action by engage with city - state leadership, local stakeholders, business consortiums.
- Develop framework/pathways to institutionalize climate actions & climate action plans for cities.
- Explore new finance venues and identify key levers for cities to unlocking additional finance.
- Identify, assess and test appropriate mechanisms on participatory planning and conflict resolution for implementing city climate action (buildings, transport & waste sector)
- Assess the effectiveness (including lock-ins) of methane emission reduction solutions in urban waste sector
- Implementing Healthy Air Zones in Indian cities

Critical Raw Materials and Supply Chain



Critical Raw Materials and Supply Chain

Key Activities for 2023

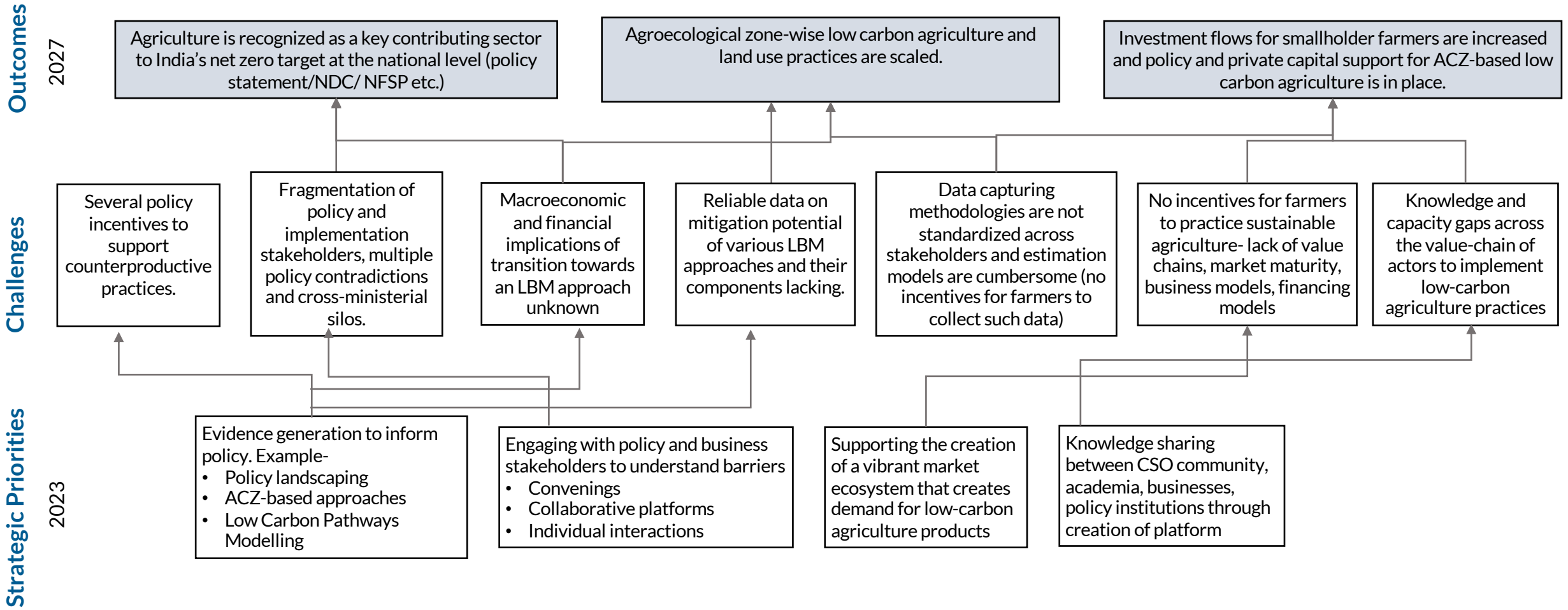
Projects in progress:

- White paper on CRM necessity and policy action for LCTs *(In-Progress)*
- A National level convening of government and industry on consensus building to work on CRM solutions
- Timeline: January 2023 – August 2023

Potential upcoming projects:

- Technical support/Project implementation support in establishing National CRM Mission
- Support in establishing the National CRM Model to predict future market & price trends
- Deep dive studies into identified policy solutions
- Building the National CRM Alliance of industry partners

Zero Emissions People and Planet-Positive Agriculture and Land Use

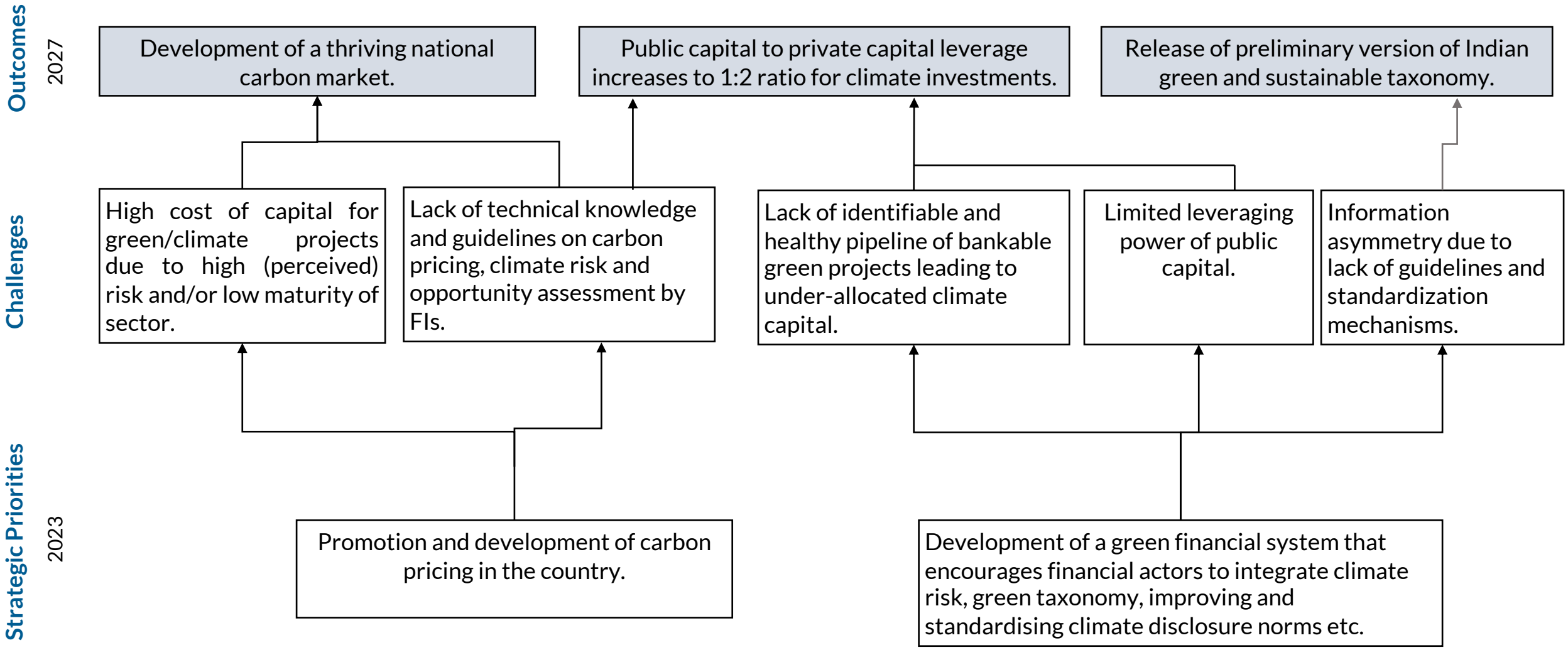


Zero Emissions People and Planet-Positive Agriculture and Land Use

Key Activities for 2023-24

- Study to analyze the emissions footprint of all practices in the food system and cost dynamics.
- Exploring livestock sector emissions in depth.
- Understanding incentives for correct reporting for estimation models- incentivizing good farmers.
- Revenue models for farmers to incentives low-carbon agriculture (carbon markets, PES, credit systems).
- Analysis of what procurement landscape – corporate and government procurement.
- Designing incentives to reward states that are doing better on sustainable agriculture.
- Training of trainers- KVKs, CSOs, ag extension network.
- Collaborative CSO platform to share learnings and disseminate knowledge.

Climate Finance



Climate Finance

Key Activities for 2023

Increase insight and development of carbon pricing

- Inform policy on domestic carbon market design
- Inform policy on operationalization of Article 6 in the country
- Assess trade-offs and impact of a carbon tax

Greening of finance

- Generate evidence and guidance on assessment of climate risk at portfolio level
- Build capacity and generate evidence on integration of climate risk by banking institutions
- Build coalitions and convening platforms for financial system stakeholders to promote greening of finance

Climate and Business

- Build capacity and generate evidence on improving disclosure standards

Exploratory Areas

These are small, exploratory initiatives to help us understand how we can engage effectively in these sectors.

Climate Resilience and Adaptation financing

Potential Key Activities for 2023

- Mapping adaptation and resilient financing requirements at sub-national level (Tamil Nadu).
- Assessing linkages between needs assessment, climate budgeting and SAPCC at sub-national level.
- Risk assessment tools – Evidence generation on loss averted (e.g. loss in property value), supply chain and business disruptions.
- Innovative financial instruments such as pooling and risk transfer mechanisms.

Sustainable Marine Resource Management

Key Activities for 2023

- Understanding:
  - Role of green technologies and marine sector's contribution to India's net-zero pathway.
  - Impact of climate change on the sector.
  - Impact on the economy.
  - Repository of key stakeholders (government, think tanks, academic institutions, private players).

- Understanding the carbon and green credit generation potential from wetlands and oceans.