

Energy Planning approaches for the Energy Transition

Global Experience and Best Practices

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Chile, December 12th, 2024



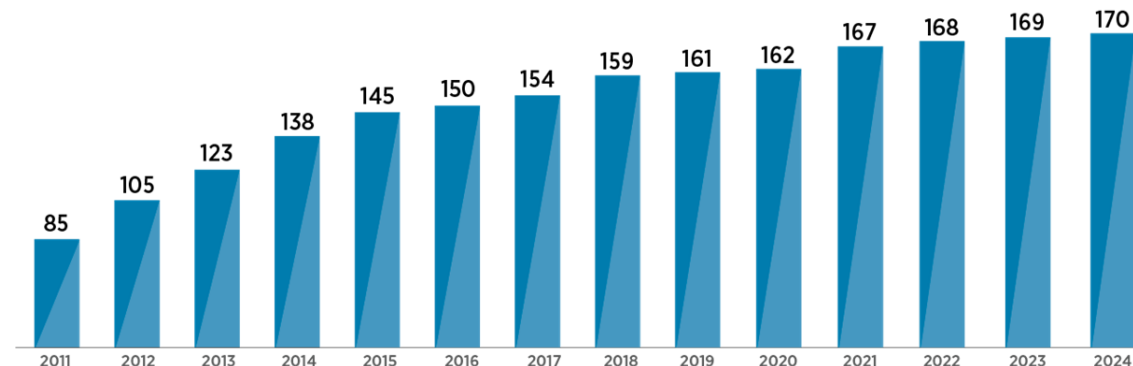
Global Platform

170 country members and
14 states in accension.



Support for Energy Transition

Planning, Policy, Finance, Socio-economic Impact, Technology, Innovation.



Dialogue and
Engagement



Outlooks and
Studies



Advice and Technical
Assistance



Analytical work,
Data and Statistics



Capacity Building

Capacity Building

- Co-creation of the capacity building/training programme
- Delivery of the programme with concrete masterplan documents
- Exchange with energy planning capacity-building partners

Peer-to-Peer Learning

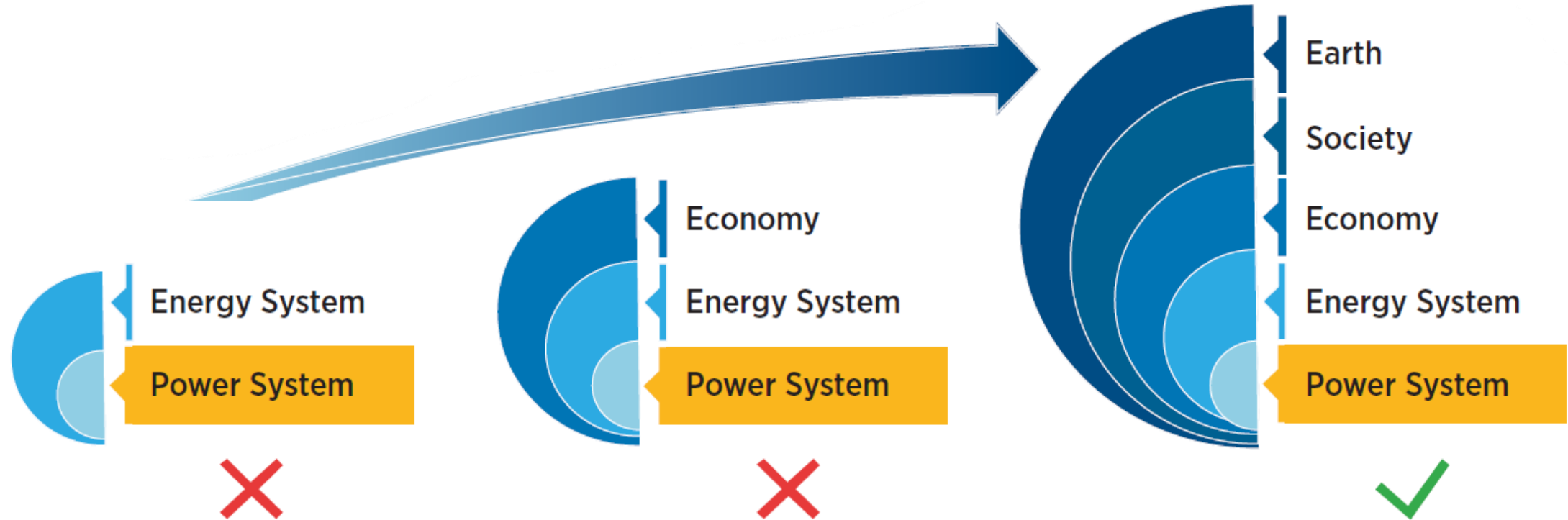
- LTES Network
- Governance around planning
- Energy planning topics for clean energy transition
- Repository of modeling tools.

Tools and Methods

- Development of modelling tools
- Best practice in modelling methods with high RE share
- Development of renewable energy data for the planning purpose.

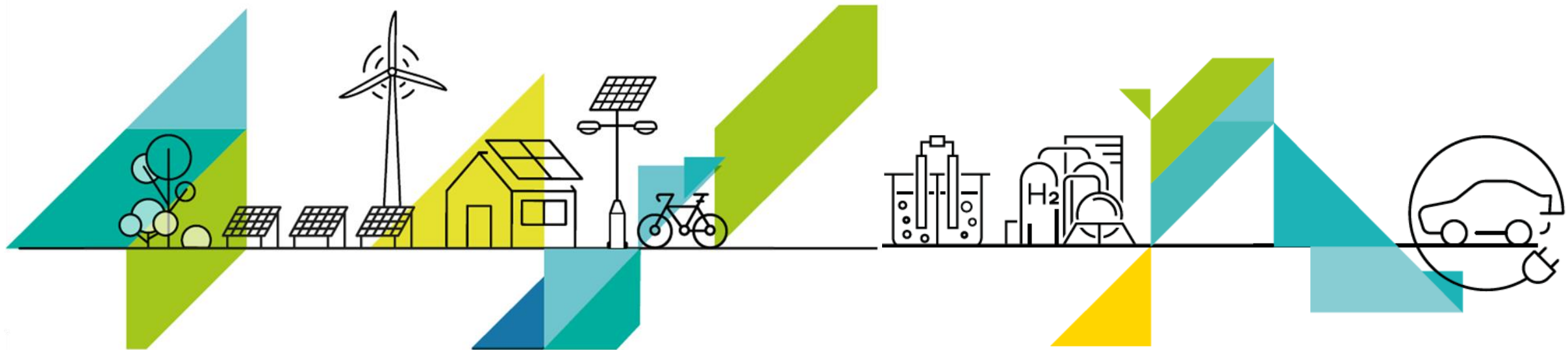
Why Traditional Planning Needs to Evolve?

Energy Transition doesn't occur in isolation



- Growing system interconnections.
- Cross-sectoral integration.
- Societal and environmental linkages

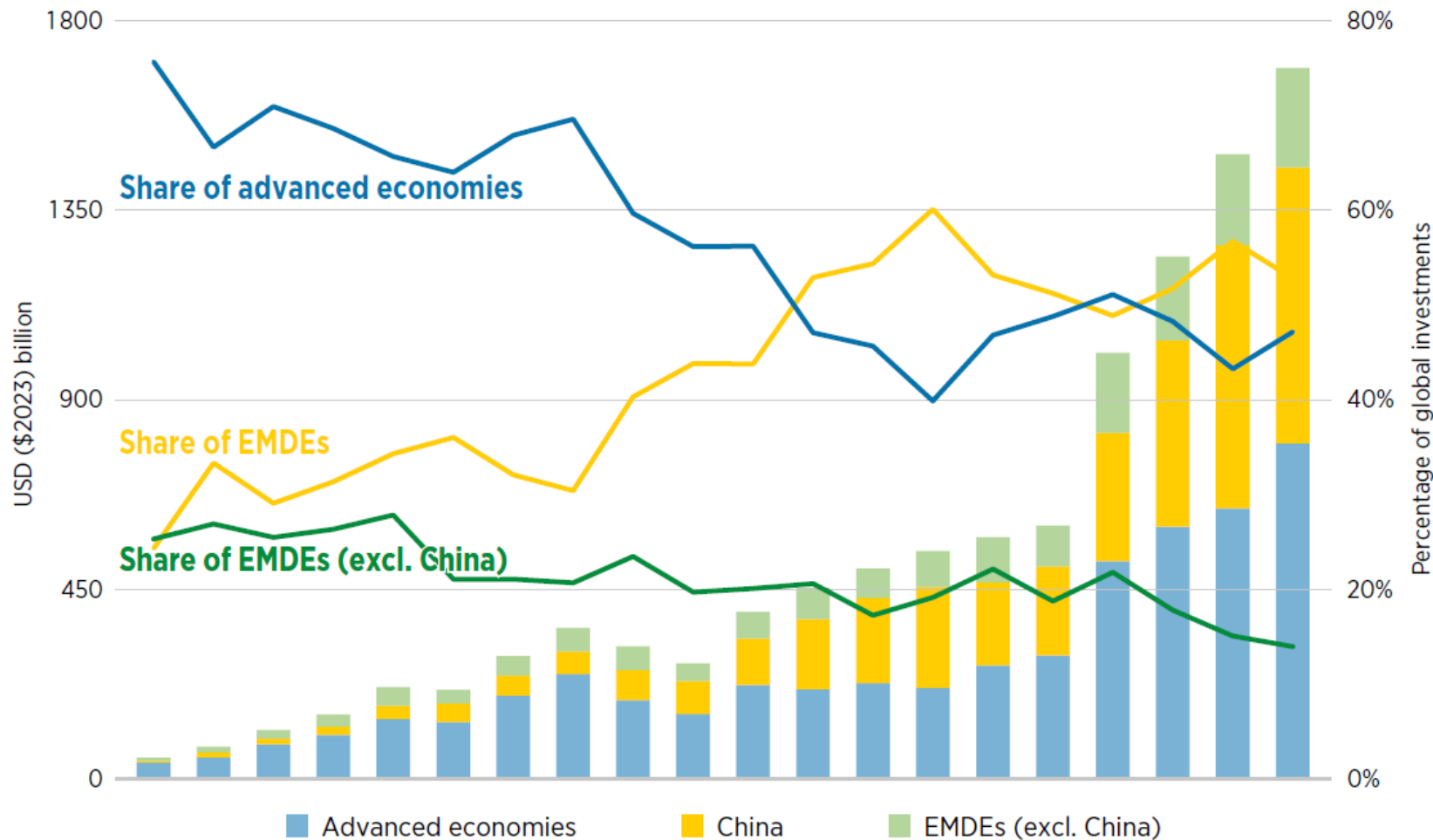
Deployment of renewable energy, energy efficiency and electrification of end-use sectors.



- Rapid technological changes & cost reductions.
- High shares of variable renewable energy integration.
- Disruptive innovations in generation and demand.
- Digitalization impacts.

Investment Landscape Changes

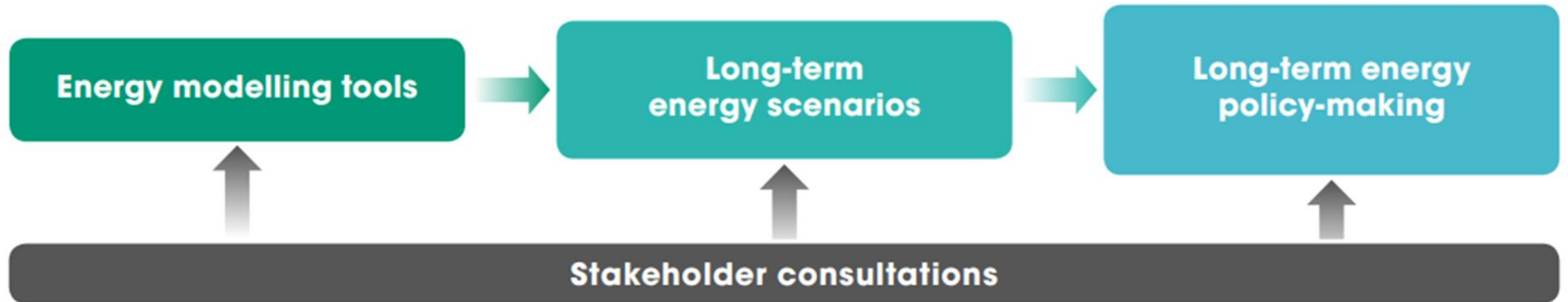
Energy transition-related investments in advanced economies and emerging and developing economies (IRENA)



- Shifting investment patterns
- Regional differences and opportunities
- Role of public and private sectors.

Global Experience in Energy Planning for the Energy Transition

How are scenarios developed and used in the energy planning process for government decision-making?



Global LTES Network

- Red de instituciones de planificación energética nacional.
- “Campeones” en desarrollo y uso de LTES.
- Aprendizaje entre pares.
- Definición de la agenda en LTES

01

Strengthening
scenario
development

02

Improving
scenario
use

03

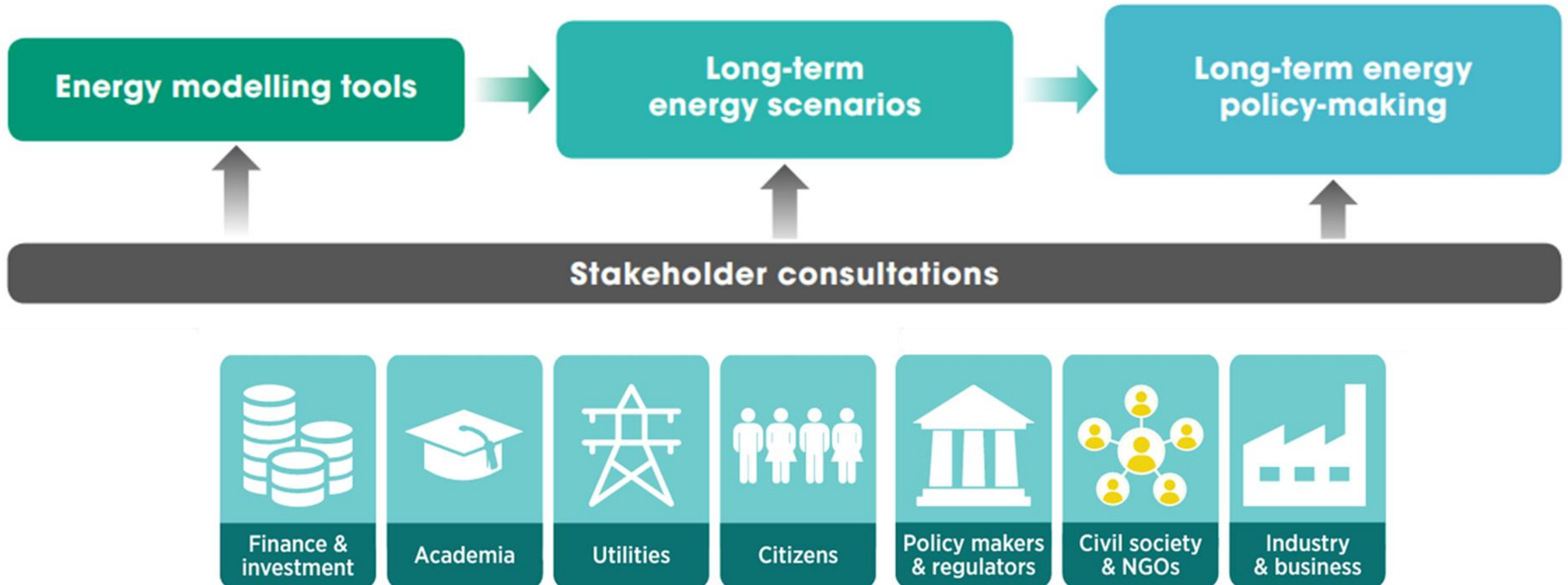
Identifying
capacity-building
approaches

30 Países miembros y 13 socios técnicos

 AUSTRIAN ENERGY AGENCY  ENVIRONMENT AGENCY AUSTRIA	 BOSNIA AND HERZEGOVINA Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina	 epe	 Natural Resources Canada / Ressources naturelles Canada Canada	 Ministerio de Energía Gobierno de Chile	 UPME Unidad de Planeación Minero Energética	 SEPSE Secretaría Planificación Subsector Energía	 MINISTRY OF ENERGY COMMERCE AND INDUSTRY	 Danish Energy Agency	 GOBIERNO DE LA REPÚBLICA DOMINICANA ENERGÍA Y MINAS
Austria	Bosnia & H.	Brazil	Canada	Chile	Colombia	Costa Rica	Cyprus	Denmark	Dominican R
 Arab Republic of Egypt Ministry of Electricity and Renewable Energy	 Dirección General de Energía, Hidrocarburos y Minas	 VTT Ministry of Economic Affairs and Employment of Finland	 Federal Ministry for Economic Affairs and Climate Action	 ENERGY COMMISSION	 GSE Gestore Servizi Energetici	 METI Ministry of Economy, Trade and Industry	 MINISTRY OF ENERGY AND PETROLEUM State Department for Petroleum	 KEEi 에너지경제연구원	 MINISTRY OF ENERGY OF THE REPUBLIC OF LITHUANIA LITHUANIAN ENERGY AGENCY
Egypt	El Salvador	Finland	Germany	Ghana	Italy	Japan	Kenya	Korea	Lithuania
 Ministry of Economics of the Republic of Latvia	 SENER SECRETARÍA DE ENERGÍA	 PBL Netherlands Environmental Assessment Agency	 PERÚ Ministerio de Energía y Minas	 DEPARTMENT OF ENERGY PHILIPPINES	 Direção-Geral de Energia e Geologia	 وزارة الطاقة MINISTRY OF ENERGY	 UNITED ARAB EMIRATES MINISTRY OF ENERGY & INDUSTRY	 Department for Energy Security & Net Zero	 eia USA
Latvia	Mexico	Netherlands	Peru	Philippines	Portugal	Saudi Arabia	UAE	UK	USA

New Planning Approaches for the Energy Transition

Inclusive Stakeholder Engagement for Planning and Decision-making



Country experiences



Ghana: Bottom-up collaborative planning through multi-stakeholder steering committee



Costa Rica: Integrated ministerial coordination with robust citizen engagement



Philippines: Centralized coordination with specialized agency delegation

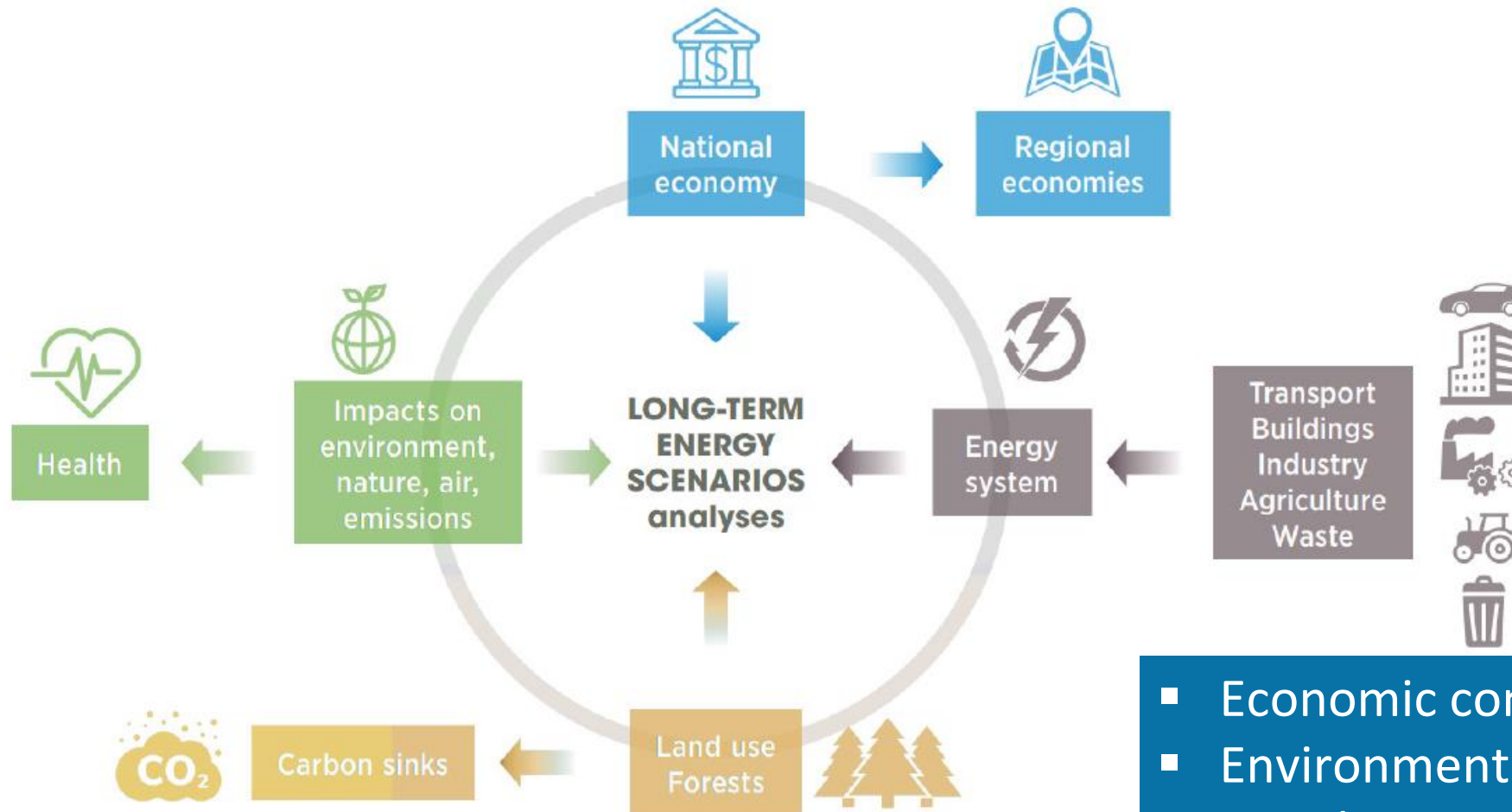


Canada: Energy Modelling Hub, to coordinate energy modeling and planning activities between federal and provincial levels



Chile: Mandated public participation by law, with dedicated team and stakeholder registry for engagement.

Country experience: Finland



- Economic considerations
- Environmental dimensions
- Social impacts
- Technical requirements

Country experiences

Planning for Uncertainty

Dominican Republic: Geographic security and system flexibility focus due hurricanes.

Multiple Scenario Approaches

Botswana: Two-pronged approach with demand and supply scenarios

Chile: Combined LEAP and AMEBA models.

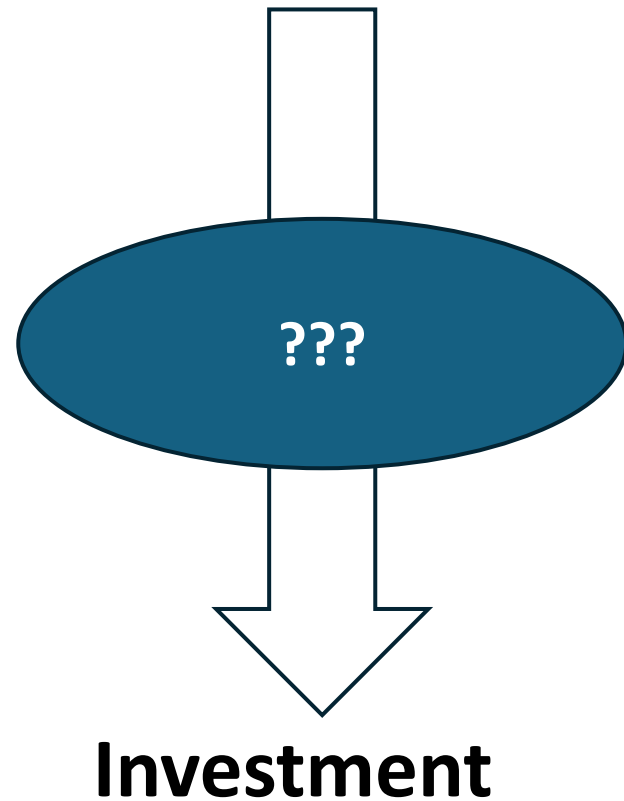
Flexibility and regular updates

Egypt: Incorporates operational constraints for system flexibility.

West African Power Pool: Regular updates for technological changes and national strategies.

- Multiple scenario approaches
- Flexibility in planning frameworks
- Adaptive pathways
- Regular review and updates

Long-term focused energy planning



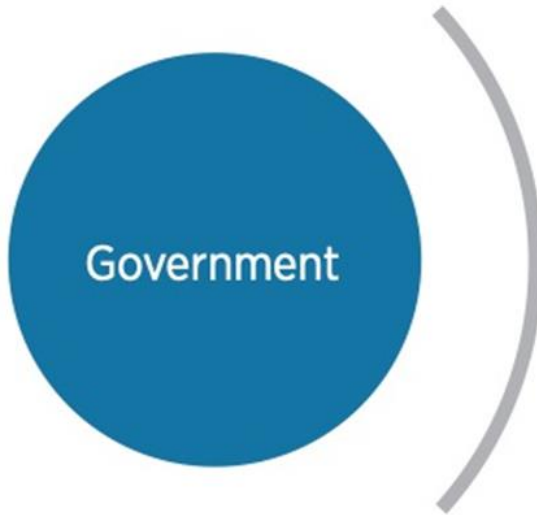
Key enablers – best practices:

1. Regulation and policies
2. Addressing bottlenecks in the whole value chain
3. Empowerment of government
4. Short-term investment plan
5. Financing strategies
6. Addressing socio-economic impacts
7. Communication to reduce uncertainty
8. Participation to identify risks
9. Well-coordinated planning governance

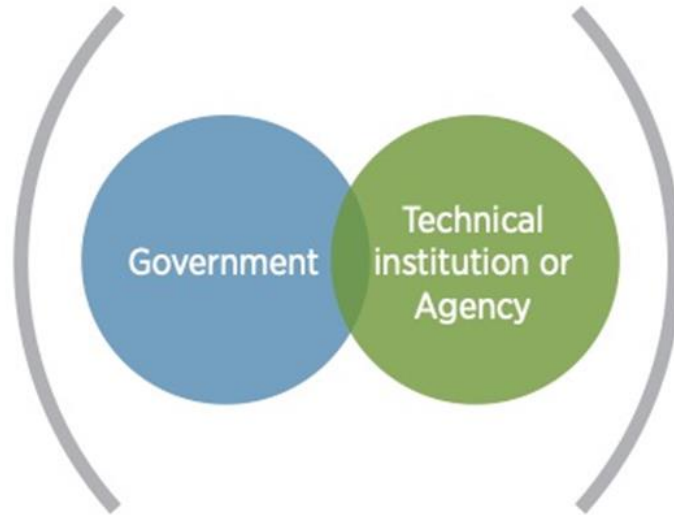
Strengthening the institutional ownership

In-sourcing

LTES capacity allocated solely within ministries or energy agencies

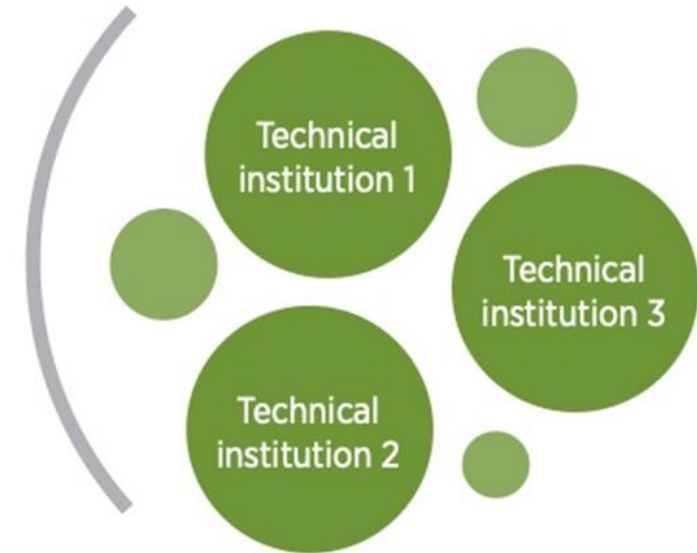


50/50



Out-sourcing

LTES capacity out-sourced to research/technical institutions or consultations



Effective Energy Planning

Set up a clear
governance
structure

Implement
regular
planning
cycles

Develop
alternative
planning
scenarios

Build
institutional
planning
capacities



GRACIAS!
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