



# Energy innovation policy: IEA perspectives

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# Background: IEA work on energy innovation

Activities under the Clean Energy Transitions Programme (CETP)

# Activities on energy innovation under the CETP (1/2)

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## Three core themes

- 1. R&D data tracking.** Support countries in collecting and reporting better data, especially Mission Innovation participants
- 2. Innovation policies.** Tailored support to energy innovation policy review, implementation and best-practice sharing
- 3. Partnerships.** Map country participation in multilateral innovation partnerships, including the Technology Collaboration Programmes (TCPs) by IEA, and foster strategic engagement

**Key focus countries so far:** Brazil, India, China

# Activities on energy innovation under the CETP (2/2)

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## Outputs of the **India-IEA** collaboration

- Chapter on energy innovation in India in-depth country review (IDR), forthcoming Jan. 2020
- Paper on innovation as part of clean energy transitions: focus on India

## Next steps for the **Brazil-IEA** collaboration?

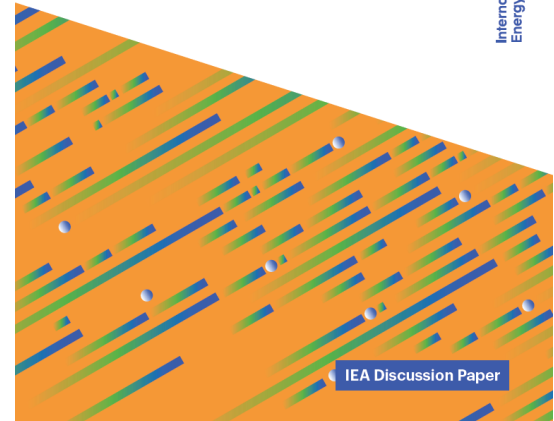
- Promote and disseminate findings from EBP
- Provide learnings from international experiences

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### Clean energy transitions: Accelerating innovation beyond 2020

Focus on India

International  
Energy Agency

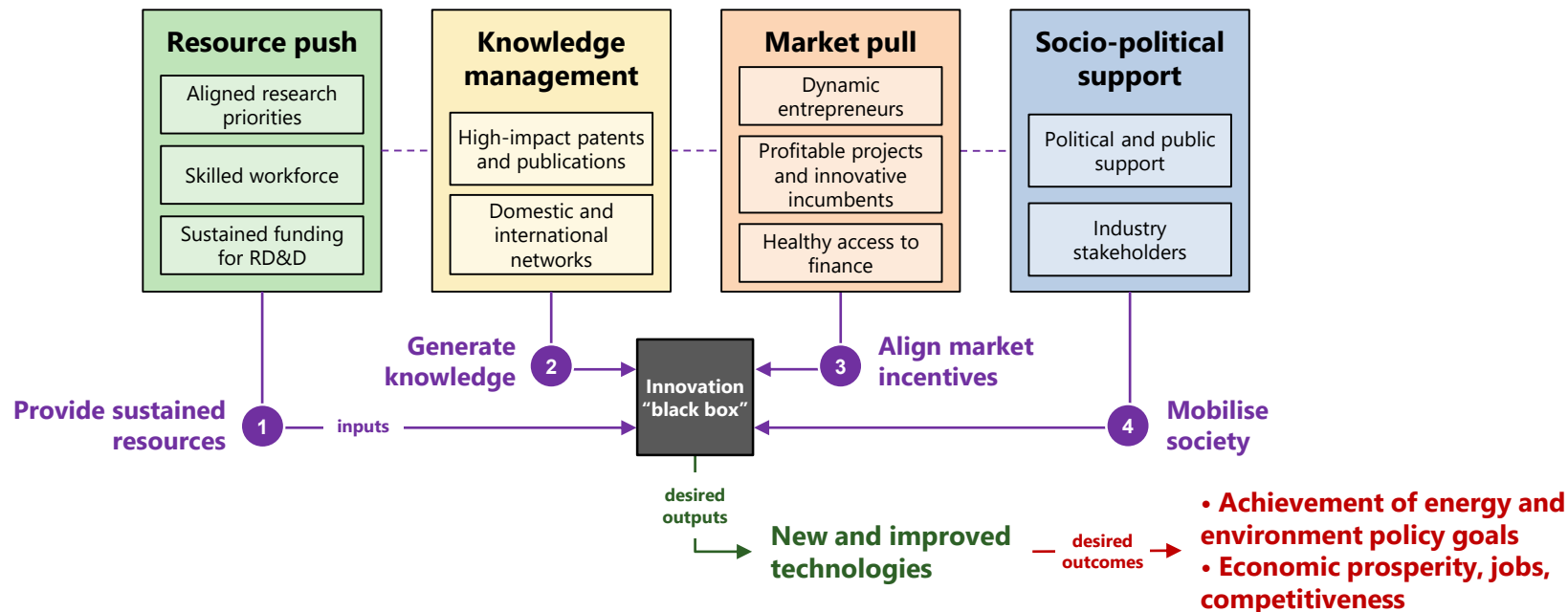


# Latest IEA thinking on energy innovation policy

A more comprehensive policy approach based on innovation systems

# What is an innovation system, and what does it do?

Tracking indicators to monitor progress



Just as for producing, transforming and using energy resource, **different policies need to work together** along the value chain of innovation.

# How does it work in practice?

Examples from the real world: Brazil and India

# Example 1: Developing biofuels in Brazil (1975-2010s)

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- **Phase 1 (1975-1979): Stimulating the bio-ethanol industry**

Low interest loans to expand mills and distilleries (RP/MP), guaranteed prices (MP), blending mandates (MP), government research (RP/KM), collaboration with industry (RP/KM/MP/SPS), subsidies to auto industry (KM/MP/SPS), etc.

- **Phase 2 (1979-1985): Accelerating innovation and scaling up**

Fixed guaranteed prices (MP), lower sales taxes and licensing fees for vehicles (MP), distribution and pump infrastructure (RP/MP/SPS)

- **Phase 3 (1985-2003): Uncertainty and relative stagnation**

- **Phase 4 (2003-2010s): Flex fuel vehicles and consolidation**

Co-operation with multinationals and promotion of international collaboration and networks (RP/KM/MP/SPS), favourable tax treatments (MP)

- **Phase 5 (2010s-2020s): ???**



## Example 2: India Cooling Action Plan (2019)

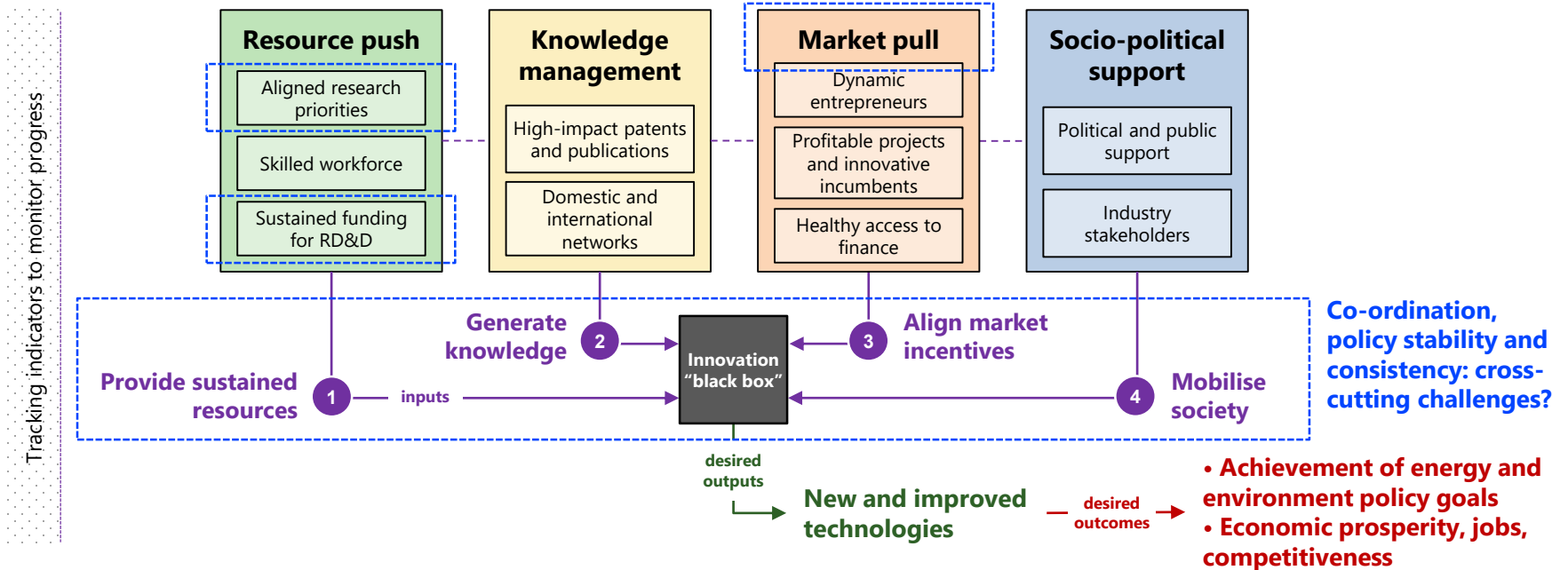
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- **Priority setting (RP)**: key technology innovation gaps + “Make in India”
- **Roadmaps of implementation (RP/SPS)**: for each identified priority, the plan proposes R&D activities in the short, medium and long term
- **Co-ordination of innovation stakeholders (KM/SPS)**: designing the plan required inputs from multiple stakeholders (public bodies, industry, think tanks, academia and R&D institutions), proposal of a “steering committee”
- **Engagement with industry (PR/KM/MP/SPS)**: proposal of a public-private R&D consortium model to conduct innovation activities
- **Government research (PR/KM)**: proposal to pool resources under a “Centre of Excellence for Cooling technologies”
- **Funding opportunities at different innovation stages (PR/MP)**: Global Cooling Prize under Mission Innovation, clean-tech incubator

# Where are WG3 findings in the framework?

Identifying strengths and weaknesses in Brazil's energy innovation system

# Situating WG3 policy conclusions in the framework



Conclusions from WG3 suggest that **priority setting**, **stakeholder co-ordination** and **resources** are main shortcomings of Brazil's energy innovation system. Are we missing anything?

# Conclusion: key takeaways and questions

Finding solutions to the identified gaps among international experiences

# Key takeaways / questions for the breakout sessions

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1. Are the **four pillars** of the energy innovation framework covered by the current policy landscape in Brazil?
2. Which innovation policy instruments under each pillar could ...
  - Align **priority setting** with national goals?
  - Create **more links** between deployment and innovation?
  - Enhance **co-ordination** between stakeholders?
  - Reinforce **funding certainty** and **programme duration**?
  - ... ?
3. Are there **missing elements** in the four pillars that we are forgetting?

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