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3rd International Forum on Long–term Energy Scenarios for the Clean Energy Transition -- 8-10June 2021

Session 5: Distilling critical energy transition features in net-zero scenarios

Designing and analyzing national deep decarbonization scenarios

Lessons learnt from the Deep Decarbonization Pathways (DDP) initiative

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Quick presentation of the Deep Decarbonization Pathways (DDP) initiative

- **An international community since 2013 led by IDDRI**
  - in-country partners in most G20 countries + 6 LAC + 2 Africa + other 'light touch'
  - Organized in multi-partner, multi-year projects with the support of structural partners (AFD, IDB, IKI, OECD, WB)
- **Mission Statement**
  - Help countries understand HOW they can transform consistently with global carbon neutrality & national socio-economic and development priorities
  - Support the adoption of ambitious targets and actions by countries and other actors

➔ Long Term Strategies is the instrument to achieve these overall objectives

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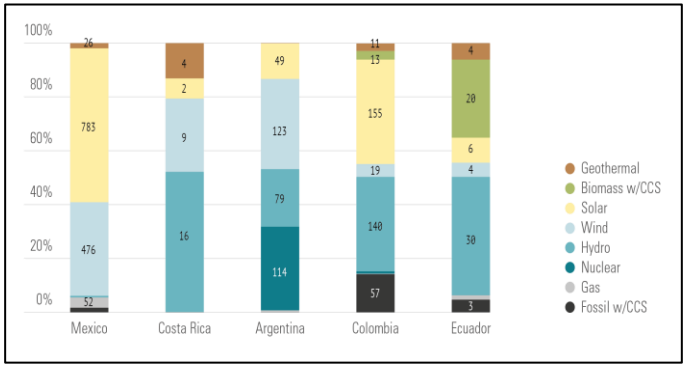
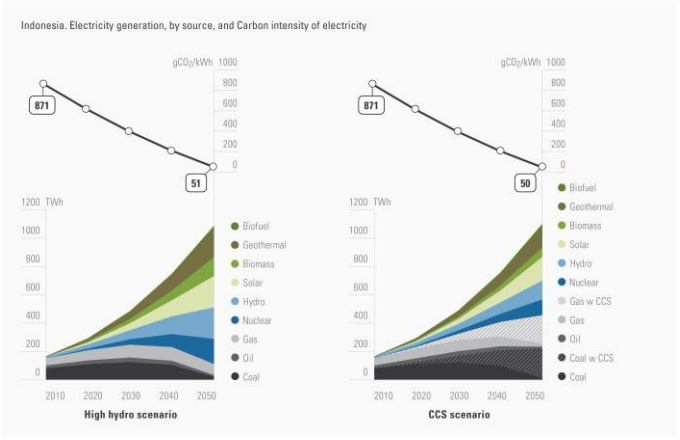
How can scenarios be used to build consensus on the winning non-regret technologies for the national net-zero strategy-making process? (if at all).

- Scenarios can reveal country-specific solutions, given national circumstances



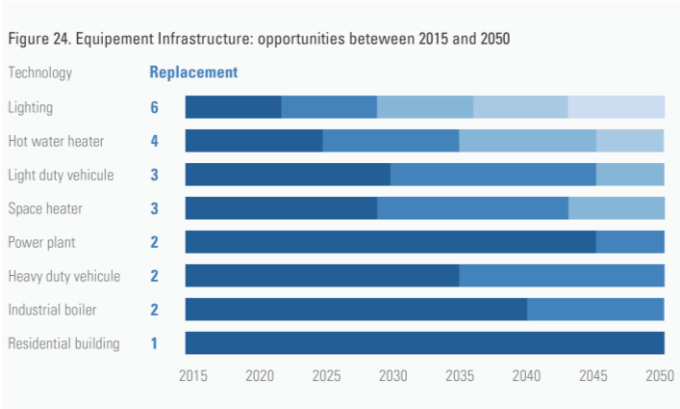
Electricity generation mix in 2050 (TWh) in 5 LAC countries for DDP scenarios (from DDPLAC project)

- Scenarios can explore alternative deacrbonization routes for a country, under alternative assumptions



Electricity generation mix in 2050 (TWh) two Indonesian DDP scenarios (from DDPP project)

- Scenarios can reveal the impact of short-term choices, given inertias and path dependencies



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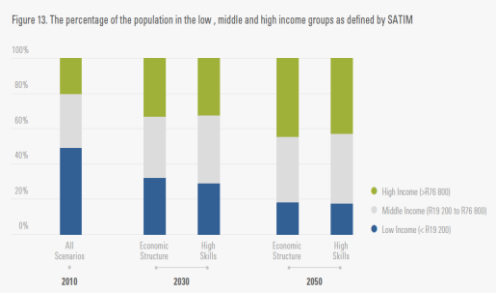
What are the critical energy technology and socio-economic transition features that must be accounted for in scenario planning?

- Scenarios must explore the three pillars together, in all sectors

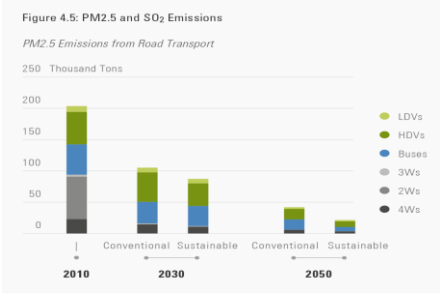
1) energy efficency, 2) fuel decarbonization, 3) end-use fuel switch

  - Different technological solutions are possible
  - Not a silver bullet, rather a package
  - International cooperation for accelerating diffusion of existing solutions and preparing new solutions
  - Technologies are not enough, cf levers of structural change

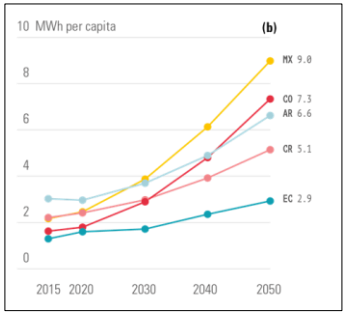
- Scenarios must capture explicitely key socio-economic priorities in the country context, eg: economic growth, energy access, energy security, inequalities, poverty, health, employment ...



Income distribution & poverty in South African DDP scenario (from DDPP project)



Air pollution benefits in India DDP scenario (from DDPP project)



Electricity production per capita in 6 LAC countries for DDP scenarios (from DDPLAC project)

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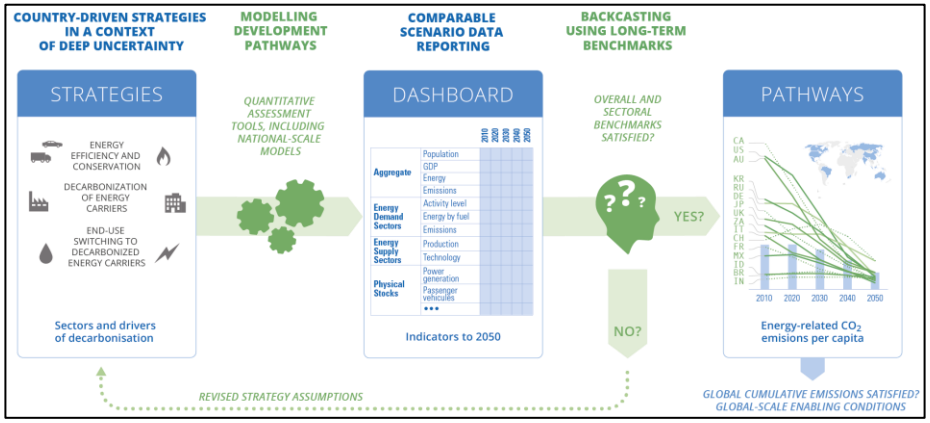
What are the areas of improvement for scenario development tools to address these critical features? Any good practices to beshared?

- Articulate the two sides of scenario design
  - detailed narratives (language of stakeholders)
  - selected quantified metrics (dashboard)
- What about models?
  - translation tool to « inform the story », not to « tell the story »
  - selection according to the context (not « one size fits all »)
- Articulation national - global = benchmarking and consistency on national boundary conditions >> harmonization from the top



DDP pathways design framework

Waisman et al (2019) « A pathways design framework for national low greenhouse gas emission development strategies » Nature Climate Change 9.4 (2019): 261-268

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