

The Chilean experience

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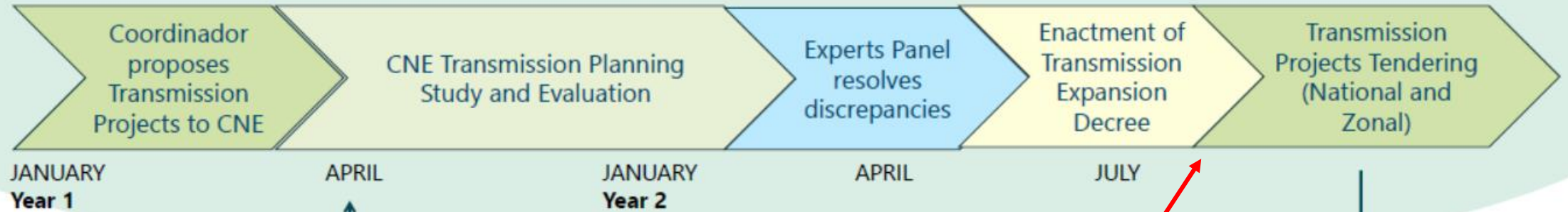
Transmission planning process in Chile

TRANSMISSION PLANNING AND DELIVERY (Electricity Law 20.936/2016)

Long-Term Energy Planning Process
Developed every 5 years by the Ministry of Energy – 30 year-horizon

Scenarios

ANNUAL TRANSMISSION PLANNING PROCESS – 20 year-horizon

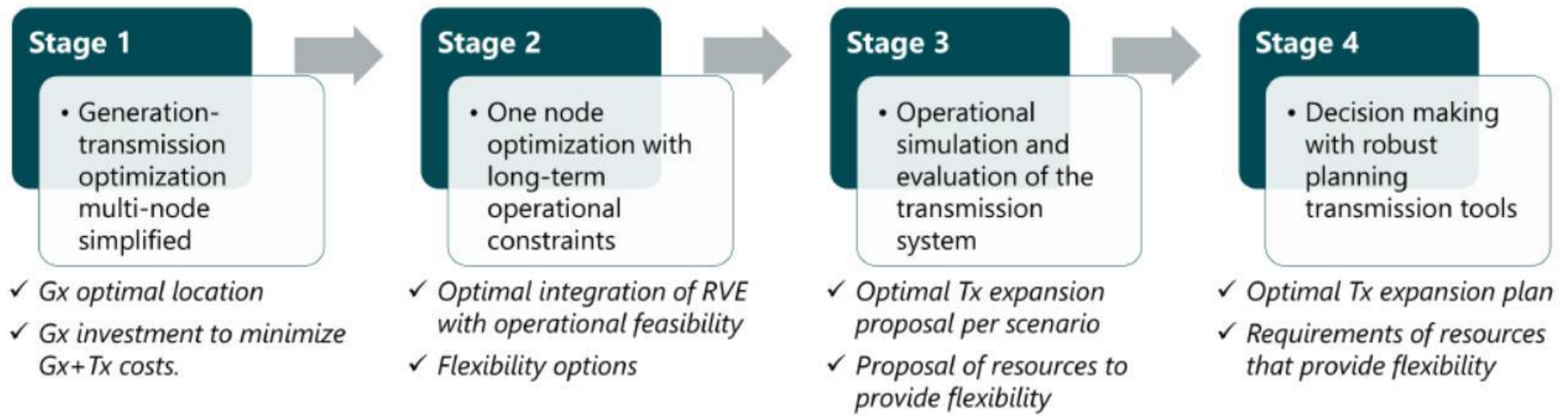


Market agents propose transmission projects to CNE

Eventually,
Stripe Study

Upgrade and Expansion projects tendered by Coordinador (National and Zonal transmission)

COORDINADOR'S TRANSMISSION PLANNING METHODOLOGY



Challenges:

- Integration of Variable Renewable Energy (VRE) and Decarbonization process.
- Coordination with distribution planning (Distributed generation).
- Technology challenges (HVDC, Flexible AC Transmission Systems: FACTS, ESS, Smart grids).

New process for civil society participation

Some general context first

General

- Last week: plebiscite for new constitution. 80% support.
- Significant development and reduction of poverty, but still large inequalities and abuses.
- Social crisis: protests against neoliberalism, violence, military, curfew, human rights violation, deaths.

Energy and Grids

- To be considered, transparency, not black-box.
- Long distances, many stakeholders/negotiations, long process.
- Renewable curtailment due to lack of transmission. Too fast, can't catch up!

HydroAysen - a good example of failure (2011-2014)

- 2.75GW hydro-dams, **3200km** HVDC line, 80% market concentration.
- 11 people decision (2011), protests, 74% of opposition.
- Cancelled (2014), environmental and social risk just too high.



HydroAysen rallies 2012



New 'Strategic Environmental Evaluation' (SEE) for grids - the 'Stripe Study' (SS)

- Before: TSO decided power line stripes + project-specific 'Environmental Study'.
- SS (2016): Now the Chilean state decides the stripes based on SEE.
- SEE: **Techno-economic, Social y Environmental Balance**, Impact of policy/program (not just a project), Proactive, Big-picture, Civil and Indigenous Involvement.
- SS goals: **1. strategic intervention & 2. early acceptability.**
- SS steps: EPRI-GTC for Chile (consulting) => Decides one (Minister of Energy) => Approval (Sustainability Commission) => Tendering + 'Environmental Study' => Construction.

- **Pros:** proactive, continuity, acceptability, community benefits.
- **Cons:** and quick solutions?!, coordinating the bureaucracy.

