



HIDROAYSÉN

PATAGONIA'S MEGAPROJECT

IS IT SUSTAINABLE DEVELOPMENT?

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BACKGROUND

- HidroAysén is a project to build five dams in Chile's northern Patagonia Aysén Region, an area the size of Tennessee. The project would generate hydroelectric power which will then be transmitted 1,250 miles to connect to Chile's power grid.
- Two of the dams would be placed on the Baker River and three on the Pascua River.

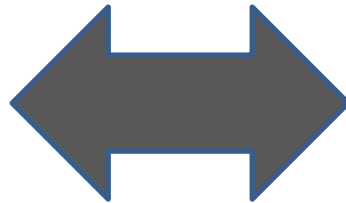


BACKGROUND

The project would flood 15,000 acres in an area known for its pristine beauty.



WHO IS BEHIND THE PROJECT?



- The project is a joint venture between Endesa and Colbún S.A., a Chilean energy company.
- Together they would control 80% of the Chilean energy market.
- Transmission, generation & distribution are all privately controlled.

HIDROAYSÉN PROJECT

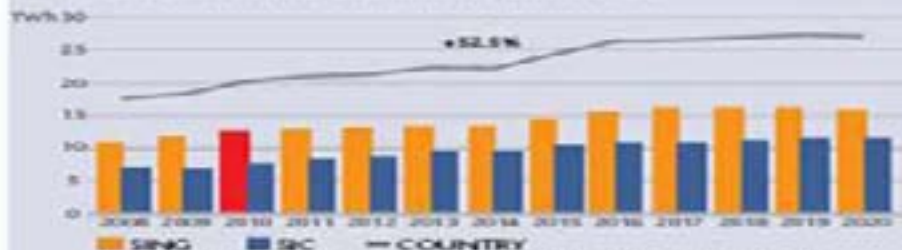
- Cost = \$3.2 Billion U.S. dollars (\$1.5 trillion Chilean pesos)
- Result= 2,750 MW with capacity for 18,430 GWh on average annually
- High voltage direct current would feed into main grid via 1,250 mile long transmission line into Santiago.
- Chaitén to Puerto Montt transmission line would be underwater for 100 miles.

WHY

- Chile needs to almost double installed capacity to meet demand.
- Chile's mining industry needs much more power.
- Chile imports 97% of fossil fuels and depends largely on hydropower for electricity.

PROJECTED ELECTRICITY CONSUMPTION

BY COPPER MINING OPERATIONS, UNTIL 2020



Technical energy demand in Chile by copper mining operations and supply sector by prospect*. Chilean Copper Commission, Studies Department.

MINING, BY THE NUMBERS

- Chile is the world's number one copper producer (33% of the world market).
- Copper prices rose by 49% in 2010.
- Chilean copper production is expected to rise by 60% between 2006 and 2020.
- Mining companies' electricity consumption is set to rise by 52% between 2006 and 2020.
- Copper mining accounts for 85% of electricity consumption in the regions covered by the SING system, namely Antofagasta, Atacama and Tarapacá (24% of the total in Chile).
- Copper-mining generated GHG emissions registered a 95% increase between 2001 and 2009.

ELECTRICITY GENERATION

THE SING SYSTEM (NORTH), BY SOURCES



"Chile's Energy Matrix: Precedents and Future Challenges". Energy Ministry, Chile.

ELECTRICITY CONSUMPTION

(THE NORTHERN HALF OF CHILE, BY REGION)
Consumption data (CMTG)

TARAPACÁ*
Total consumption
2,351
Copper mining
64.8%

ANTOFAGASTA*
Total consumption
11,346
Copper mining
85.5%

ATACAMA*
Total consumption
3,107
Copper mining
45.1%

COQUIMBO**
Total consumption
1,964
Copper mining
53%

VALPARAÍSO**
Total consumption
4,370
Copper mining
22.2%

METROPOLITANA**
Total consumption
16,997
Copper mining
21.6%

O'HIGGINS**
Total consumption
3,695
Copper mining
34.6%

Energy Distribution and Consumption in Chile*. National Institute of Statistics, Information Bureau.

* Norte Grande Interconnected System (SING)
** Norte Central Interconnected System (SIC)

THE PROJECT



Generation

- **Hydropower generated by damming of Baker & Pascua Rivers**
- **Flooding 15,000 acres**
- **Attracted attention from NGOs which spurred protests and appeals**
- **Chile's Supreme Court rejected appeals earlier this year-generation project approved**



Transmission

- **1,250 mile long transmission line channeling power into Santiago**
- **100 miles of line undersea**
- **Longest transmission line aside from transatlantic telegraph**
- **Approval based on upcoming Environmental Impact Assessment (EIA)**

UNDERWATER TRANSMISSION

- From Chaitén to Puerto Montt the transmission line would be undersea, to avoid Parque Pumalin.



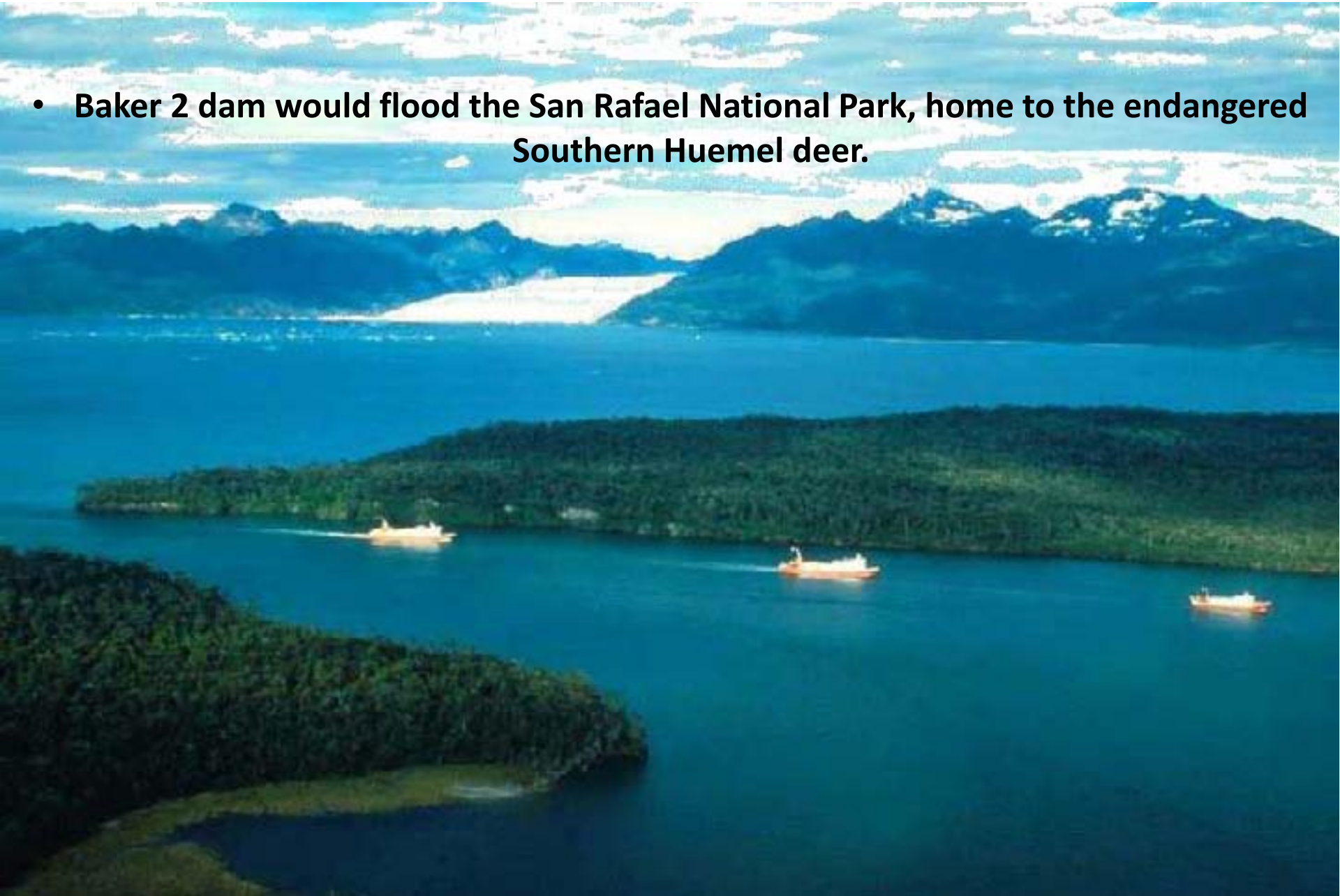
- Parque Pumalin is a private nature reserve running from the Argentine border to the sea that is owned by the Tompkins family.
- The Tompkins object to the lines cutting through the park.



ECOLOGICAL CONCERNS

SAN RAFAEL NATIONAL PARK

- **Baker 2 dam would flood the San Rafael National Park, home to the endangered Southern Huemel deer.**



TEHUELCHÉ ABORIGINAL INDIANS

- Patagon was the word used by Magellan to describe the natives he met. It is believed that Patagons were actually the Tehuelche.
- Tehuelche Indian burial sites were found in the region likely to be flooded by the dams.
- The 2007 UN Declaration on Indigenous People Rights affect Aysén Tehuelche burial sites.
- The Declaration imposes rights recognized by the Inter-American Human Rights Court in several contemporary cases. *See* Alvarado, 24 Ariz. J. Int'l & Comp. Law 609 (2007).

GLACIAL CONCERNS

- **Dam waters are fed by glaciers that are thousands of years old.**
- **A 2009 study by MIT graduate engineers found that sedimentation produced by the dams would lower water levels in glacial lakes.**
- **As glaciers continue to melt, the sustainability of the project is called into question.**



IMPACT ON RIVER SYSTEMS

UNKNOWN



- **The Environmental Impact Assessment submitted for the generation portion appears deficient in multiple areas, including an analysis of the possible damage to river systems.**

POLITICAL CLIMATE

OPPOSITION

- In response to the project, protests erupted all over the world.

- Protests in Chile became violent.



- Project is opposed by Greenpeace, several NGO's including the NRDC, and 61% of Chileans.



SUPPORTERS IN CHILE

President Sebastián Piñera



Former President Lagos



“Chile is still a poor country, with 2.5 million poor people, and to overcome poverty we need energy, and for that reason we need to develop our own resources, the most competitive ones. . .it would be very selfish on the part of the rich countries to say, ‘Look how they are destroying these uninhabited pristine areas.”

– Isabel Gonzalez, former head of Chile’s National Energy Commission

ECONOMIC CONCERNS

EQUATOR PRINCIPLES

ENVIRONMENTAL AND SOCIAL RISK MANAGEMENT FOR PROJECT FINANCE

- **Equator Principles (EP) are adopted by financial institutions and applied to Project Finance transactions exceeding \$10 million in capital costs.**
- **Financial institutions commit to not providing loans to projects where the borrower will not or is unable to comply with their respective social and environmental policies and procedures.**
- **Many banks in the U.S., Western Europe, and other developed countries have adopted the Equator Principles.**



EQUATOR PRINCIPLES

ENVIRONMENTAL AND SOCIAL RISK MANAGEMENT FOR PROJECT FINANCE

- **Free market economies and environmental protection are not mutually exclusive.**
- **EP are direct results of free market pressures for major financial institutions to condition project funds on recipient willingness to protect the environment.**
- **The Spanish bank BBVA has cited the Equator Principles as an insurmountable barrier to funding the HidroAysén project.**
- **Is HidroAysén economically feasible without major Chilean government investment, which Chile is very reluctant to do because of a strong privatization philosophic commitment?**
- **If Equator Principles apply, and Chile will not spend public resources, where will the project funding come from?**



LEGAL CONSIDERATIONS

INTERNATIONAL LAW



- **Except for African Charter, the International Human Rights Conventions are silent on environmental protection.**
- **Article 11 of Additional Protocol to American Convention (signed, but apparently not ratified by Chile) recognizes the right to a “healthy environment” and promotes “protection, preservation and enjoyment of the environment.”**

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD)

- **Organization of 34 member countries; Chile fought hard to be a member**
- **OECD Guidelines for Multinational Enterprises**
- **Comment 69 to the Guidelines states: “The basic premise of the Guidelines is that enterprises should act as soon as possible, and in a proactive way, to avoid . . .serious or irreversible environmental damages resulting from their activities.”**



CHILE'S LEGAL & ENVIRONMENTAL FRAMEWORK



- Main legal body regarding environmental protection is the General Environmental Act of 1994.
- Since the enactment of this legal body, *the concept of sustainable development has supported all legal, institutional and instrumental aspects of environmental management.*
- Article 19 of Chilean Constitution requires government and people enforcement of environmental laws.

INTERPRETING CHILE'S CONSTITUTIONAL ENVIRONMENTAL PROVISIONS

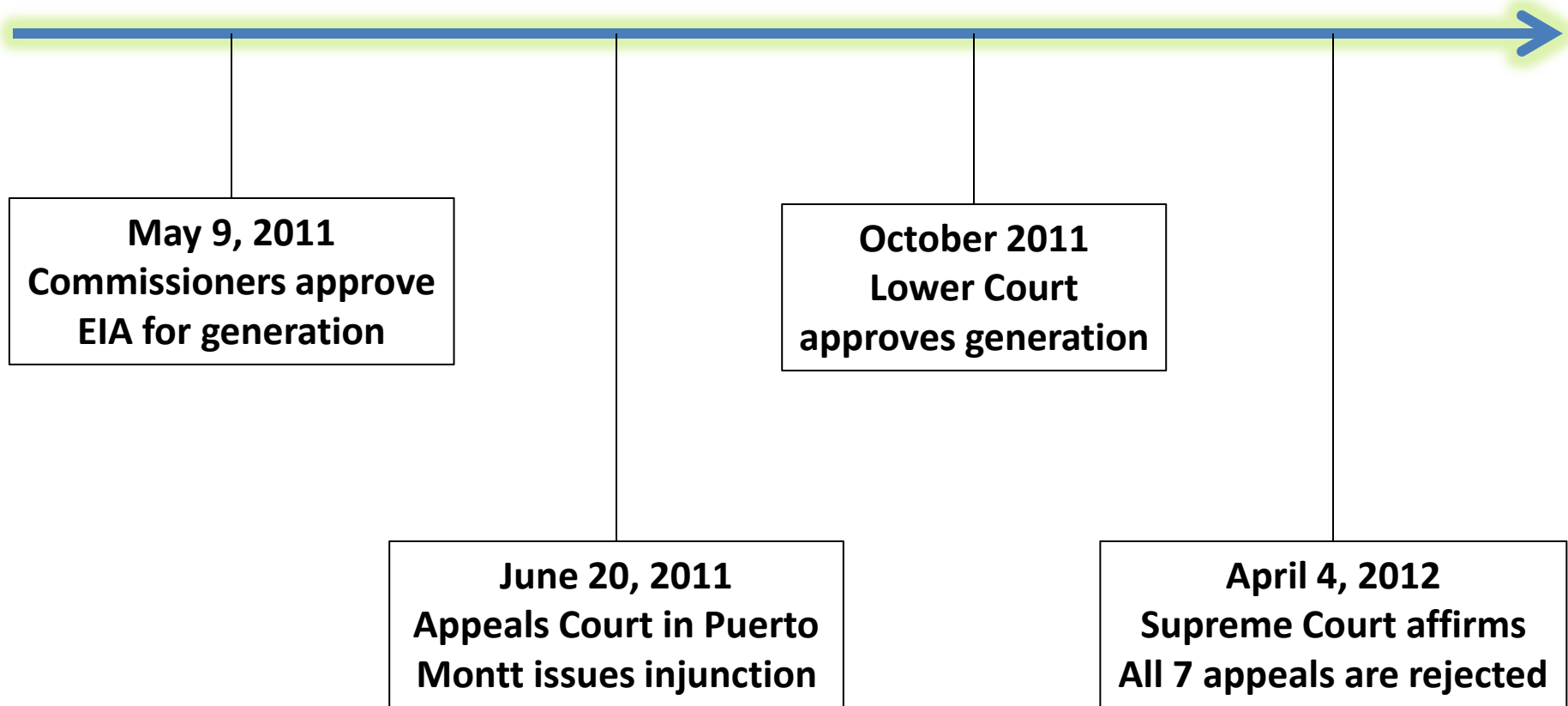
- In *Comunidad de Chañaral v. Codelco Division el Saldor*, a 1985 case, the Supreme Court found that the right to a clean environment is owed not only to individuals and communities but to future generations.
- In 1988, the Supreme Court held in *Pedro Flores y Otros v. Corporacion Del Cobre, Codelco*, that the preservation of nature and the conservation of the environmental heritage is an obligation of the State, according to the Chilean Constitution.

INTERPRETING CHILE'S CONSTITUTIONAL ENVIRONMENTAL PROVISIONS

- ***Trillium* case in 1995 is a landmark decision that turned directly on the question of sustainability.**
- **Enjoined a large-scale logging operation of the trees in Tierra del Fuego.**
- **Supreme Court clarified that direct, individual harm need not be shown to enforce the constitutional environmental right to be free of environmental contamination.**



LEGAL HISTORY OF HIDROAYSÉN



- This project has not been fully litigated on the merits

HIDROAYSÉN SUPREME COURT DECISION

- **On April 4, 2012, the Chilean Supreme Court rejected seven appeals brought by civil and environmental organizations against the project.**
- **Environmental Impact Assessment initially approved by lower court contains factual errors and blatantly ignored issues.**

CONTROVERSY?

- **3-2 Split Decision**
- **Judge Pedro Pierry who cast the deciding vote in the split decision owned over 100,000 shares in Endesa Chile.**



MOVING FORWARD

SUSTAINABLE ALTERNATIVES

Promote governmental policy that favors a competitive market for Renewable Non-Conventional Energy

- **Solar energy from the Atacama Desert**
- **Wind energy in southern Chile**
- **Geothermal energy from volcanoes**
- **Ocean current generation**



CURRENT STATUS

- **May 2012, Colbún publicly stated the project would be put on hold because of unclear energy and environmental policies.**
- **Chile's government still under pressure from mass protests.**
- **With President Piñera's support the project is set to submit Environmental Impact Assessment for transmission in December.**



CONCLUSION

Can and will the Chilean government allow the HidroAysén project to proceed in the face of Chile's international and domestic legal obligations?

