

The Future of Hydropower in Chile

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Existing legal and regulatory frameworks in Chile do not ensure adequate opportunities to address the trade-offs associated with hydropower effectively. As a result, hydro projects have become the focus of intense public protests and legal disputes. This article provides a historical overview of hydro development in Chile, and then analyses three elements of Chile's hydropower 'problem': the need for improved governance of the electricity and water sectors, more comprehensive and timely environmental and social impact assessment, and fuller respect for the rights of indigenous peoples affected by hydropower projects.

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Introduction

In recent years, hydropower projects have proliferated in Chile,¹ creating winners (investors) and losers (ecosystems and displaced communities). Relevant stakeholders in Chile, including government actors and the private sector, argue that it is vital to develop the country's hydropower resources to meet growing energy demand and support the country's continued growth. They see water as a primary domestic energy resource. Until recently, few efforts were made to identify other resources, such as solar, wind or sea tides, that could provide sustainable energy.² As of 2011, hydropower comprised about 35 per cent of Chile's electricity matrix.³ The rest includes primarily imported natural gas, coal and oil.⁴ Given the growing demand for electricity, interest in investing in hydropower development has been booming.⁵

At the same time, the negative environmental and social impacts of hydropower are increasingly clear. Much of the country's hydropower potential is concentrated in the south, often in areas with unique natural beauty and high ecological and tourism value. A substantial portion of these resources is located in lands that traditionally belong to the Mapuche, Chile's largest indigenous people (see Annexes, maps 1–4). The Mapuche and many others in Chile are demanding more careful consideration of the trade-offs involved in hydropower, as well as a more substantial voice in decisions about whether and how to build these projects.

Existing legal and regulatory frameworks do not ensure adequate opportunities to address the relevant trade-offs effectively. The privatised nature of the hydropower sector leaves only a weak regulatory and indicative planning role for the state. Members of the public have few opportunities

1 As of 2010, more than 60 hydropower projects were in development, under construction or under environmental review, according to: Sociedad de Fomento Fabril (SOFOFA), 'Mapa Energético de Chile: Proyectos de Inversión' (Departamento de Estudios, II Semestre 2010) www.sofofa.cl/indicadores/CPI/Informe/Mapa_Energetico.pdf accessed 2 May 2014.

2 See, eg, Universidad de Chile and Universidad Técnica Federico Santa María, 'Aporte potencial de Energías Renovables No Convencionales y Eficiencia Energética a la Matriz Eléctrica, 2008-2025' (Patagonia Sin Represas June 2008) www.patagoniasinrepresas.cl/final/dinamicos/energia-BAJA.pdf accessed 14 January 2014.

3 'National Energy Strategy 2012-2030' (Ministerio de Energía 2012) www.minenergia.cl/estrategia-nacional-de-energia-2012.html accessed 15 September 2013.

4 The matrix is 35 per cent hydro, 30 per cent coal, 20 per cent natural gas, 12 per cent petroleum, one per cent wind, one per cent small-scale hydro and one per cent biomass, according to Comité Editorial Comisión Ciudadana Técnico-Parlamentaria para la Política y la Matriz Eléctrica, 'Chile necesita una gran reforma energética: propuestas de la comisión ciudadana-técnico-parlamentaria para la transición hacia un desarrollo eléctrico limpio, seguro, sustentable y justo' (2011) Comisión Ciudadana Técnico-Parlamentaria para la Política y la Matriz Eléctrica 35.

5 SOFOFA, n 1 above.

to participate in hydro-related decisions, so they often turn to protests or take legal action in an effort to be heard. Even though Chile is a signatory to International Labour Organisation (ILO) Convention 169 Concerning Indigenous and Tribal Peoples in Independent Countries, which establishes specific rights, including consultation, for indigenous peoples, state and private actors have largely been unable to develop projects in a way that adequately respects Mapuche rights. This has aggravated a longstanding and simmering conflict between the Mapuche and the Chilean State. As a result, some projects are delayed or halted, while others are approved through decision-making processes that are seen as illegitimate, sometimes with disastrous results for communities and ecosystems.

Simply put, the status quo is not working. Hydropower is a problem in Chile.

Issues surrounding hydropower development in Chile: past and present

To understand how decision-makers in Chile might begin to address the country's hydropower 'problem', it is important to understand how it evolved. In this section we provide a brief history of Chile's hydropower development, and then frame the core issues as we see them.

Brief history of hydropower development in Chile

1880s–1940s

Hydropower has been a key component of Chile's energy matrix since the 1880s.⁶ At that time, and for the next 50 years, electricity generation, transmission and distribution were driven almost entirely by the private sector.⁷ According to energy expert Sebastian Bernstein, by 'the 1930s four main electricity companies had emerged: the Chilean Electrical Company (Chilectra), the General Industrial Electrical Company (CGEI), the Southern Electrical Society (SAESA) and the National Electrical Force Company (CONAFE)'.⁸ Large industrial and mining ventures also began to generate energy to meet their increasing electricity needs. By 1940, Chile had a

6 Sebastian Bernstein, 'Sector Eléctrico' in Cristián Larroulet (ed), *Soluciones Privadas a Problemas Públicos* (Instituto Libertad y Desarrollo 1991), 177.

7 Endesa and CORFO, *Plan de electrificación del país* (Universitario 1956), 27.

8 Bernstein, n 6 above, 177. This and all other translations from Spanish to English were provided by the authors and should be considered unofficial.

total of 487 MW of installed capacity.⁹ Carbon and small-scale hydro were the primary energy sources.

In 1904, the Chilean State took initial steps to regulate the electricity sector by authorising the issuance of government concessions for the use of public land for electricity generation and transmission.¹⁰ Two subsequent regulations, the 1925 and 1931 General Laws on Electrical Services,¹¹ established a tariff system and created an even stronger regulatory role for the state.

1940s–EARLY 1980s

In the early 1940s, Chile's national government took greater control of electricity development and planning, a trend that lasted through the early 1980s. In 1943, the government created Endesa, a publicly owned utility company charged with the generation, transmission and distribution of electricity throughout the country. Endesa was created as a subsidiary of Corporación de Fomento de la Producción (Corfo),¹² Chile's Economic Development Agency, and tasked with implementing the first National Electrification Plan (the 'Plan'). A key goal of that Plan was to provide electricity to a range of consumers, including distribution companies, industries, rural electrification cooperatives and agricultural users.¹³ During the first phase of the Plan, separate regional electricity systems were constructed. This infrastructure was then interconnected so that excess energy could be transferred from one geographical region to another (between La Serena in the central-north and Puerto Montt in the south). The interconnection of these regions ultimately resulted in the Central Interconnected System (Sistema Interconectado Central – SIC), which today provides electricity to about 90 per cent of Chile's population (see map, Annex 5).¹⁴

Although Endesa was primarily in charge, a second private electricity company, Chilectra, also played a role, mostly in the development of thermolectric plants and the distribution of electricity in the Santiago and

9 *Ibid* 178.

10 Ley 1665 Prescripciones para la Concesión de Permisos para la Instalación de Empresas Eléctricas en la República 1904.

11 Decreto con Fuerza de Ley 252 Ley General de Servicios Eléctricos 1925 and Decreto con Fuerza de Ley 244 Ley General de Servicios Eléctricos 1931.

12 'Historia' (Endesa Chile) www.endesa.cl/Endesa_Chile/action_gob_corp.asp?id=00140 accessed 7 November 2013.

13 'Plan de Electrificación Nacional' (Memoria Chilena) www.memoriachilena.cl/602/w3-article-93677.html accessed 7 November 2013.

14 'Sistema Interconectado Central' (Comisión Nacional de Energía) www.cne.cl/energias/electricidad/sistemas-electricos/343-sic accessed 7 November 2013.

Valparaíso areas.¹⁵ Chilectra was eventually nationalised under the socialist presidency of Salvador Allende, through Law 17.323 of 1970.¹⁶

A key feature of this period was the emphasis placed on hydropower. Endesa and Corfo identified hydro as the most important electricity generation resource for the country¹⁷ and took steps to facilitate its use. For example, the National Electrification Plan led to the creation, by 1952, of the Registry of Hydraulic Resources of Chile (Catastro de los Recursos Hidráulicos de Chile), which identified all potential hydro projects with the capacity to produce over 1,000 kW.¹⁸ Over the long term, implementation of the National Electrification Plan involved setting priority among these potential projects according to their generating capabilities, estimated unit costs of electricity production and proximity to existing and potential centres of electricity consumption.

Overall, the establishment of Endesa as an integrated power utility and the implementation of the Plan resulted, by the early 1960s, in the rapid development of Chile's electricity infrastructure. It also allowed for the consolidation and completion of nationwide hydrological information and the development of a long-term view of Chile's energy supply and demand. At this time, Chile had no real environmental legal frameworks in place, and there was little environmental awareness among the public. Notwithstanding this fact, during this period few social and environmental problems associated with hydropower were brought to the fore, and there was little public protest against hydropower projects.¹⁹

EARLY 1980S–PRESENT

After the coup of 1973, the military government began a process of implementing widespread free-market orientated reforms. In the energy sector, these reforms were applied in earnest beginning in the early 1980s.²⁰ The privatisation of the electricity sector occurred in two ways: through modifications of applicable legal frameworks and the privatisation of the state-owned electricity companies, Endesa and Chilectra.

15 Bernstein, n 6 above, 178.

16 *Ibid.*

17 Endesa and Corfo, n 7 above, 77.

18 *Ibid* 74.

19 This is not to say that hydropower resulted in no social or environmental problems during this time. Some projects did create problems, but these did not lead to conflicts the way more recent projects have.

20 A few modifications in this sector were made in the late 1970s. Of particular relevance, Decree with Force of Law (DFL) No 2.224 of 1978 created the National Energy Commission.

One of the most important legal reforms came in 1982, with the issuance of Decree with Force of Law (DFL) No 1, the General Electrical Services Law on the Subject of Electrical Energy.²¹ As expert Carl Bauer describes it, DFL No 1 'restructured the national electricity sector according to market principles',²² creating new frameworks and regulations that encouraged decentralisation and privatisation. Among other changes, the law recognised generation, transmission and distribution as three distinct segments of the electricity sector. It aimed to foster competition in the generation subsector, whereas transmission was 'to be governed as an open access regime allowing all generators a non-discriminatory use of available transmission capacity'.²³ Distribution was viewed as a 'natural monopoly' that required government regulation.

With regard to hydropower specifically, another key change was the establishment of the Water Code, through DFL No 1.122 of 1981.²⁴ This law made it possible for private sector actors to acquire water rights independent of land ownership. While water was still considered a 'common good for public use',²⁵ the Water Code in effect created a 'water market' in which water rights could be bought, sold and otherwise commercialised. Currently, almost all water rights have been allocated, mostly to private interests.

The privatisation of Chilectra and Endesa was carried out in stages. Both companies were broken into subsidiaries, which were divided according to the three electricity subsectors (generation, transmission and distribution). In 1981, Chilectra was divided into Chilectra Metropolitana, for distribution in the Santiago region; Chilectra V Region (or Chilquinta), for distribution in the Valparaíso Region; and Chilectra Generacion (or Chilgener), for generation. Between 1983 and 1987, each of these entities was sold to private investors. Endesa was also divided into subsidiaries, one of which, Colbún SA, remained state-owned. The rest of Endesa was sold through a public offering between 1987 and 1989.²⁶ The Endesa subsidiaries retained 'all the water rights, technical studies, and hydrological data that the company had accumulated during its 45 years as a government enterprise'.²⁷ This tilted the playing field in their favour, towards hydropower.

21 Decreto con Fuerza de Ley 1 Ley General de Servicios Eléctricos en Materia de Energía Eléctrica 1982.

22 Carl J Bauer, 'Dams and Markets: Rivers and Electric Power in Chile' (2009) 49 *Natural Resources Journal* 583, 615. Hereafter cited as Bauer 2009.

23 Ricardo Raineri, 'Chile: Where it All Started' in Fereidoon Sishansi and Wolfgang Pfaffenberger (eds), *Electricity Market Reform: An International Perspective* (Elsevier 2006), 77.

24 The Water Code distinguishes between maritime waters and terrestrial waters, and applies only to the latter.

25 Decreto con Fuerza de Ley 1.122 Código de Agua 1981, Art 5. Hereafter cited as Water Code.

26 Bernstein, n 6 above, 199.

27 Bauer 2009, n 22 above, 625.

By the time the military government ended in 1990, Chile's electricity sector was almost entirely privatised. Some relatively minor adjustments have been made since then. For example, Law No 19.940 of 2004, or Short Law I, addressed certain shortcomings of the transmission market,²⁸ and Law No 20.018 of 2005, or Short Law II, incentivised investment in electricity generation.²⁹ Law No 20.257 of 2005, the Law on Non-conventional Renewable Energies, required generators with capacity above 200 MW to ensure that at least five per cent of their electricity comes from non-conventional renewable sources. This target will increase gradually to ten per cent by 2024.³⁰ Finally, in 2010 Law No 20.402 established the Ministry of Energy.

Other than these adjustments, the privatised system created during Chile's military government is still in place. Successor companies to Endesa, Chilgener and Colbún, the leading generation companies in 1990,³¹ remain the leading electricity producers. As of 2012, Endesa Chile, which was taken over by Endesa España in 1999 and then by the Italian company Enel, was the leading energy generator in Chile, with 34 per cent of the market.³² Chilgener (later known as Gener) was acquired by the United States-based AES Corp in 2001. Today, it is known as AES Gener and is the second-largest generator in Chile, with 17 per cent of the market.³³ Colbún was privatised in 1997, and is currently controlled by the Grupo Matte, one of Chile's most powerful business conglomerates. Today, it is the third-largest generator in Chile, with 16 per cent of the market.³⁴

Controversial hydropower projects: a few recent examples

As Chile's electricity sector has evolved, hydropower has remained an important part of the electricity matrix, but has become a source of increasing controversy. Some hydro conflicts have gained national and international attention.

28 Rodrigo Mazzo, 'Las Leyes Corta I, II y de ERNC: potenciando el mercado de la energía eléctrica' (Biblioteca del Congreso Nacional de Chile, 27 January 2010) www.bcn.cl/carpeta_temas_profundidad/ley-corta-1-2-electricidad accessed 14 November 2013.

29 *Ibid.*

30 *Ibid.*

31 Bauer 2009, n 22 above, 625.

32 'Power Plants' (Central Energía, website updated 14 November 2012) www.centralenergia.cl/en/power-plants-chile accessed 2 December 2013.

33 *Ibid.*

34 *Ibid.*

RALCO

One of the first high-profile conflicts over hydropower began in the 1990s when Endesa proposed two dams on the upper Bío Bío River. Both were located within the traditional territory of the Mapuche Pehuenche people (see Figure 1). The first, Pangué, began operation in 1996 on Pehuenche ancestral land, forcing the resettlement of about 100 people. The second, Ralco, began operation in 2004. Ralco flooded approximately 3,500 hectares, including lands that were legally owned by the Pehuenche. It led to the resettlement of 675 people, including 500 people belonging to Pehuenche communities.³⁵ Despite strong opposition from both indigenous and non-indigenous communities, the project was approved and implemented with strong government support.³⁶

The impacts of the Ralco dam were severe. The reservoir not only flooded sacred lands, including a Pehuenche cemetery, but also lands where the Pehuenche had traditionally undertaken farming and animal breeding. As a result, the project undermined their traditional way of life, forcing many families to migrate in search of new livelihoods. By 2009, the area was among the poorest in Chile, with 44.5 per cent of the population, largely Pehuenche, living below the poverty line.³⁷ The wealth generated by Ralco was not shared with the 'host' community, a common theme in many of Chile's hydropower controversies.

The impacts of Ralco went beyond displacement and poverty. It also inaugurated an era of criminalisation of Mapuche social protests against development plans. Although these protests have largely been peaceful, they have been violently repressed by the state. Starting with Ralco, Mapuche protesters have been prosecuted under a harsh anti-terrorism law. Cases of police brutality against Pehuenche people were also common during the construction of Ralco.³⁸

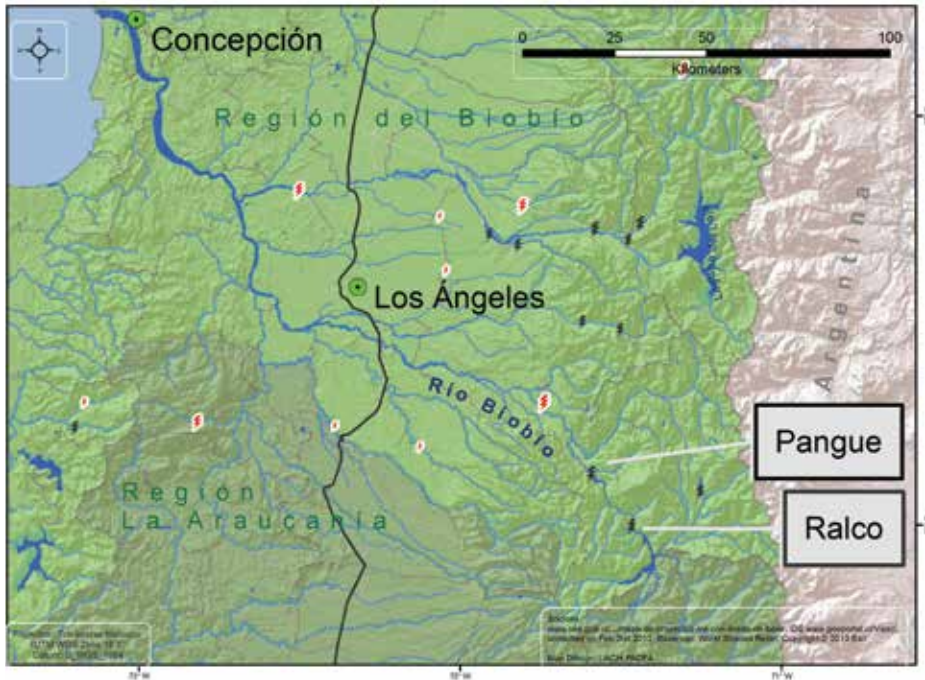
35 Ana María Silva Jiménez, 'The Ralco Dam negotiation: On the limits and possibilities of holding out to a transnational company in a cross-cultural negotiation' (LLM Thesis, Georgetown University 2004).

36 In 2002, five Pehuenche women brought the Ralco case to the Inter-American Commission on Human Rights. This resulted in an agreement with the Chilean Government under which individual compensation was granted to the petitioners. The Chilean State also promised collective compensation for the Pehuenche, as well as legal and political reforms, including a constitutional reform and ratification of ILO Convention 169. To date, however, most of these reforms, with the exception of the ratification of Convention 169, have not been implemented. *Mercedes Julia Huenteao Beroiza et al v Chile*, P4617-02, Inter-American Court of Human Rights Report No 30/04 (11 March 2004).

37 Ministerio de Desarrollo Social, *Incidencia de la Pobreza a Nivel Comunal, según Metodología de Estimación para Áreas pequeñas: Chile 2009 y 2011* (Community Report Series 1) (6 February 2013).

38 Concern about the criminalisation of Mapuche social protests in the context of large extractive developments has been expressed, among others, by UN Special Rapporteur on the Rights of Indigenous Peoples Rodolfo Stavenhagen (2003); UN Special Rapporteur on the Rights of Indigenous Peoples, James Anaya (2009); the UN Committee Against Torture (2009); and the UN Committee on the Elimination of Racial Discrimination (2009, 2013).

Figure 1: Pangué and Ralco map



Sources: www.sea.gob.cl/contenido/mapa-de-proyectos-eia-con-lineas-de-bases; IDE, <http://geoportal.cl/Visor/>, accessed 2 February 2013; 'World Shaded Relief' © 2013 Esri. Map design: UACH FACEA

Ralco was a turning point in the history of Chile's hydropower sector. Although the campaign to halt construction of the dam failed, it shifted 'the terms of national debate away from the automatic approval of new dam projects'.³⁹ For the first time, questions about the appropriate balance between energy needs and negative social and environmental impacts caught the public's attention. Ralco also raised awareness of the impacts of such projects on the Mapuche people, and about gaps in the legal protections provided to Chile's indigenous peoples, including their rights to consultation and natural resources.

SN POWER PROJECTS

In 2006, the Norwegian company SN Power, through its subsidiary Trayenko SA, proposed a series of hydro projects in Panguipulli, located in Chile's Los Ríos Region and within traditional Mapuche territory (see Figure 2). The company proposed four hydro developments, called Liquiñe, Maqueo, Pellaifa and Reyehueico. These were a combination of small and medium dams and run-of-the-river plants, with a combined generating capacity of 650 MW.

³⁹ Bauer 2009, n 22 above, 648.

The projects stood to affect indigenous and non-indigenous communities as well as other stakeholders. They were especially strongly resisted by the affected Mapuche communities. Legal actions and protests impeded SN Power's ability to carry out technical studies in the field.⁴⁰ Dialogue efforts were unsuccessful in addressing the key cultural, social and environmental impacts that were important to these communities.⁴¹ Compensation and aid offered by SN Power also failed, in part because they were perceived as efforts to divide local communities.⁴²

Ultimately, the opposition campaign succeeded in halting the projects, and in 2011 SN Power sold its shares to a Chilean company, Trans Antarctic Energía.⁴³ This case represents one of the first (of just a few) examples of a major hydropower project stopped by public opposition. SN Power recognised that as a public corporation of a state (Norway) that is a signatory to ILO Convention 169, it could not proceed against the will of Mapuche communities.⁴⁴ The SN Power case suggests that the public can exercise influence over the development of hydro projects. It has also raised the profile of ILO Convention 169, ratified by Chile in 2008 and in force since 2009, and the specific rights it provides for indigenous peoples.

40 Silvia Schönerberger and Hernando Silva, *Los Proyectos Hidroeléctricos de SN Power en el valle Liquiñe comuna de Panguipulli* (Observatorio Ciudadano 2009), 17.

41 *Ibid* 21.

42 Alessandra Aponte, 'Shifting Power Imbalance in Hydropower Generation Conflicts: The Case of SN POWER in Panguipulli, Chile' (Master Thesis, Universidad Austral de Chile 2012).

43 Trans Antarctic has redesigned the Maqueo project. This new proposed project has caused concern among Mapuche communities that stand to be affected by it. 'Comunidades del Lago Maihue manifiestan amplio rechazo a proyectos hidroeléctricos' *El Ciudadano* (Santiago 13 September 2013) www.elciudadano.cl/2013/09/13/82324/comunidades-del-lago-maihue-manifiestan-amplio-rechazo-a-proyectos-hidroelectricos accessed 7 February 2014.

44 Nils Huseby, SN Power's CEO in Chile, said: 'Our thinking was that we are different from Endesa. Endesa basically used the police to get [the Pangué and Ralco] projects built... Our approach was that we would never do that. The Norwegian approach is to have dialogue with communities. I still think we could have done this differently.' 'SN Power writes off NOK 130m, exits Trøyen project in Chile' (2011) 6(11) *Development Today*, www.development-today.com/magazine/2011/dt_6/news/sn_power_writes_off_loss_of_nok_130m_exits_trøyen_project_in_chile accessed 14 November 2013.

Figure 2: The SN Power Project (Pellaifa, Reyehueico, Liquiñe, Maqueo) and Neltume



Sources: www.sea.gob.cl/contenido/mapa-de-proyectos-eia-con-lineas-de-bases; IDE, <http://geoportal.cl/visor/>, accessed 2 February 2013; 'World Shaded Relief' © 2013 Esri. Map design: UACH FACEA

NELTUME

In 2010, Endesa submitted its Neltume hydro project for environmental review. This run-of-the-river plant is also located in the Los Ríos Region and within Mapuche territory. If constructed, it would generate approximately 490 MW.

The initial project design stood to affect private conservation lands. Pressure from powerful landowners, however, resulted in a new project design.⁴⁵ This current design contemplates diverting water from the Fui River, running it through the project's turbines and discharging it into Lake Neltume. Among the primary impacts identified in the project's Environmental Impact Study is a 'variable increase' in the level of Lake Neltume.⁴⁶ This will affect two Mapuche communities,⁴⁷ including by

45 Interview with Endesa representative (Neltume July 2012).

46 'Ficha del Proyecto: Central Hidroeléctrico Neltume' (Servicio de Evaluación Ambiental) http://seia.sea.gob.cl/expediente/ficha/fichaPrincipal.php?modo=ficha&id_expediente=5124693 accessed 8 November 2013.

47 Instituto Nacional de Derechos Humanos, *Mapa de conflictos socioambientales en Chile* (Instituto Nacional de Derechos Humanos 2012), 256–258.

causing seasonal flooding of an Nguillatuwe, a Mapuche sacred site where seasonal religious ceremonies are performed.

As a consequence of strong opposition, Chile's environmental authorities have not yet approved this project.⁴⁸ In 2013, the environmental authorities of the Los Ríos Region initiated a consultation process with affected indigenous communities, in order to comply with ILO Convention 169.⁴⁹ Convention 169 standards on consultation have not been met, however, and this has resulted in legal action against the project in the Chilean courts, causing further delays.⁵⁰

HIDROAYSÉN

HidroAysén is a large-scale hydropower project proposed jointly by Endesa and Colbún. It has led to the highest-profile hydropower dispute in Chile's history. The project calls for the construction of five large dams on the Baker and Pascua Rivers, located in Chilean Patagonia, with a combined estimated generating capacity of 2,750 MW (see Figure 3). The dams would flood over 5,000 hectares in a pristine section of Patagonia. Although the project was approved in 2011 by the regional environmental authorities, it is currently on hold.⁵¹ Questions regarding the installation of 2,000 kilometres of power lines connecting the project to consumption centres in the central and northern regions of the country are unresolved.⁵²

HidroAysén has been strongly resisted by the local inhabitants of Aysén and by other sectors of Chilean society, including environmental groups

48 Panguipulli Reserva de Vida, 'Informe Ejecutivo: Proyectos Central Hidroeléctrica Neltume y Línea de Alta Tensión S/E Neltume – Pullinque de Endesa Enel', <http://es.scribd.com/doc/97136919/Informe-Ejecutivo-Proyectos-Central-Hidroelectrica-Neltume-y-Linea-de-Alta-Tension-SE-Neltume-Pullinque-de-Endesa-Enel> accessed 23 October 2013.

49 'Confirman consulta indígena por proyecto Central Hidroeléctrica Neltume' *Bío Bío Chile* (Santiago 30 April 2013) www.biobiochile.cl/2013/04/30/confirman-consulta-indigena-por-proyecto-neltume-de-endesa-enel.shtml accessed 7 November 2013.

50 Parlamento de Coz Coz et al, 'Denuncia situación de vulneración del derecho a la consulta por los proyectos Central Hidroeléctrica Neltume y Línea de Alta Tensión S/E Neltume – Pullinque' (letter addressed to UN Special Rapporteur on the Rights of Indigenous Peoples James Anaya, January 2014).

51 Since the initial writing of this article, in June 2014, the Bachelet administration rejected HidroAysén, ruling in favour of citizen lawsuits and invalidating the project's environmental approvals. 'Comité de Ministros revoca permiso ambiental a proyecto HidroAysén' *La Tercera* (Santiago 10 June 2014) www.latercera.com/noticia/negocios/2014/06/655-581778-9-comite-de-ministros-revoca-permiso-ambiental-a-proyecto-hidroaysen.shtml accessed 20 June 2014.

52 In January 2014 Endesa dropped HidroAysén from the portfolio of projects it presents to investors, citing uncertainty around whether the project will materialise. 'Endesa Chile retira HidroAysén de catastro de proyectos que presenta a inversionistas' *El Mercurio* (Santiago 7 January 2014).

and Mapuche organisations. After its initial approval, it was the subject of massive protests throughout Chile.⁵³ Opinion polls showed that the majority of Chileans opposed the project. Dozens of legal actions were filed. The many local, national and international organisations opposed to the project organised under the umbrella of Patagonia Sin Represas, an NGO that has effectively channelled public opposition. Opponents cite the pristine nature of the zone of impact, a sparsely settled area that is widely viewed as unique for its natural attributes and has been identified as a 'life reserve' by the local population.⁵⁴ They have also questioned the project's environmental impact studies and their approvals.⁵⁵ Moreover, they have challenged the assertion that HidroAysén is necessary to meet Chile's growing energy demand,⁵⁶ forcing debate around how much energy Chile really needs and what the appropriate balance is between economic growth and natural resource protection.

As for the transmission lines needed to transport electricity to consumption centres in the north, these will inevitably have to cross private property, including Mapuche lands protected by ILO Convention 169. In an effort to address this situation, the executive branch presented to Congress proposed legislation aimed at facilitating the construction of a so-called 'Electric Highway' to transport electricity generated by HidroAysén.⁵⁷ This legislation is still being debated. To date, no consultation with indigenous peoples has been carried out.

53 See, eg, 'Protesta contra HidroAysén convocada por internet congregó a 30 mil personas' *La Tercera* (Santiago 14 May 2011).

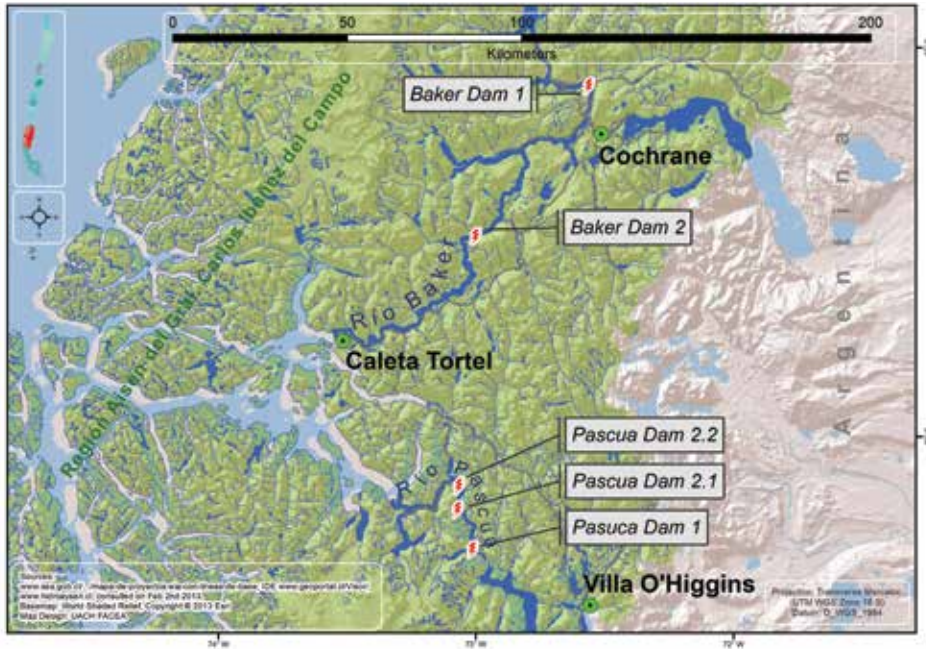
54 Patricio Segura, 'HidroAysén y Energía Austral quieren represar la Patagonia para convertirla en la gran pila de Chile' in Sara Larraín and Pamela Poo (eds), *Conflictos por el agua en Chile: Entre los derechos humanos y las reglas del mercado* (Gráfica Andes 2010), 349–360.

55 See, eg, Luis Sepúlveda, 'Carta Abierta al Presidente de la República' (Patagonia Sin Represas, 10 May 2011) www.patagoniasinrepresas.cl/final/carta-abierta-al-presidente-de-la-republica-por-luis-sepulveda.php accessed 6 January 2014; and Amanda Maxwell, 'Finally, a Chilean authority says no to HidroAysén' (Natural Resources Defense Council Switchboard Blog, 20 June 2011), see http://switchboard.nrdc.org/blogs/amaxwell/finally_a_chilean_authority_sa.html accessed 8 November 2013.

56 For example, see 'El Problema/Introducción' (Patagonia Sin Represas) www.patagoniasinrepresas.cl/final/contenido.php?seccion=problema accessed 8 November 2013.

57 The 'Electric Highway' (*Carretera Eléctrica*) is ostensibly an effort to improve Chile's transmission system in order to facilitate a range of initiatives. It has been widely interpreted by opponents of HidroAysén, however, as a measure to deal with that project's transmission issues. In April 2013 the president of Colbún indicated that HidroAysén would not advance unless the Electric Highway legislation was approved. See 'Carretera eléctrica podría convertirse en "traje a la medida" para aprobar proyectos como Hidroaysén' *Diario y Radio Uchile* (Santiago 10 July 2012) <http://radio.uchile.cl/2012/07/10/carretera-electrica-podria-convertirse-en-traje-a-la-medida-para-aprobar-proyectos-como-hidroaysen> accessed 6 January 2014; and 'Colbún afirma que HidroAysén no avanzará sin carretera eléctrica' *La Tercera* (Santiago 24 April 2013) *Negocios* 28.

Figure 3: HidroAysén



Sources: www.sea.gob.cl/contenido/mapa-de-proyectos-eia-con-lineas-de-bases/; IDE, <http://geoportal.cl/Visor/>, accessed 2 February 2013; 'World Shaded Relief' © 2013 Esri. Map design: UACH FACEA

The big issues

Addressing Chile's hydropower 'problem' will require at least three things:

1. The governance of hydropower in Chile needs to be improved. That is, the frameworks that govern the energy and water sectors (among others), as well as the processes for taking decisions at the national, regional and local levels must be structured in a way that is more coherent and inclusive.
2. Environmental and social impact assessments need to be more comprehensive, so that a broader range of costs and benefits to different actors and sectors are considered before or during consideration of specific hydropower projects – not after.
3. The rights of indigenous peoples need to be more fully addressed when hydropower projects are likely to affect them. These include the right to participate in relevant decisions, including in many cases by providing or withholding free, prior and informed consent; to share in project benefits; and to receive compensation for adverse impacts.

The following three sections of this article will consider each of these themes in turn.

Governance

The Chilean State has always sought to provide the public with electricity, yet the privatised nature of the electricity sector means that its ability to do so is limited. The government exercises limited regulatory authority over transmission and distribution, and engages in some indicative planning, mainly in the generation subsector. These roles refer only to the central government, acting mainly through the powerful executive branch. Government institutions at the regional, provincial and municipal levels have little role in electricity regulation or management. Generation itself is driven by the private sector.

The current state of the country's electricity 'system' is well summarised by the Advisory Commission on Electricity Development (Comisión Asesora para el Desarrollo Eléctrico (CADE)), a committee formed by former President Sebastián Piñera in 2011:⁵⁸

'The development model of Chile's electricity sector has among its basic objectives to meet demand in conditions of economic efficiency, security and sustainability. It seeks to reach these objectives in an environment in which the operation and development of the electricity industry is the responsibility of private agents – companies and consumers – and the basic role of the State is to establish the rules of the game and regulate the sector, monitor its functioning and project development... allying itself with the private sector to ensure supply.

To achieve economic efficiency we seek to privilege the development of free and competitive markets for generation and commercialization, without centralized planning and with regulation of the transmission and distribution sectors.'⁵⁹

Energy governance

Today, four institutions have responsibility for 'governing' the energy sector: the National Energy Commission (Comisión Nacional de Energía (CNE)), the Economic Load Dispatch Centres (Centros de Despacho Económico de Carga (CDECs)), the Electricity and Fuels Superintendence (Superintendencia de Electricidad y Combustibles (SEC)) and the Ministry of Energy.

58 'Biministro Golborne detalla trabajo de Comisión Asesora para el Desarrollo Eléctrico en el marco de anuncios energéticos de la Cuenta Pública' (Gobierno de Chile, 23 May 2011) www.gob.cl/informa/2011/05/23/biministro-golborne-detalla-trabajo-de-comision-asesora-para-el-desarrollo-electrico-en-el-marco-de.htm accessed 14 November 2013.

59 Comisión Asesora para el Desarrollo Eléctrico, *Resumen Ejecutivo del Informe de la Comisión Asesora para el Desarrollo Eléctrico* (Comisión Asesora para el Desarrollo Eléctrico 2011), 4.

The National Energy Commission (CNE) was established in 1978 via DFL No 2.224. It has four main functions. First, it carries out technical analyses of prices and tariffs on energy-related goods and services, according to formulas mandated by law. Secondly, it sets technical norms for the operation of electrical installations. Thirdly, it monitors and prepares projections regarding the current and future functioning of the energy sector, and makes policy recommendations based on those analyses. Finally, it is charged with advising the government on all matters associated with the energy sector.⁶⁰ In addition, every four years the CNE appoints consultants to conduct a Trunk Transmission Study. This study includes medium and long-term proposals for electricity network expansions based on different possible scenarios for future electricity generation. In short, the CNE plays technical, advisory and indicative planning roles regarding generation, and to some extent transmission. It does not, however, have any regulatory or enforcement authority.⁶¹

The CDECs are the primary coordinating mechanisms for Chile's electricity sector. They were established in 1982 through DFL No 1, the General Electrical Services Law, and were later modified through Supreme Decree No 291 of 2007. Their main role is to bring together 'power generation with power demand, deciding which power plants must enter into operation in order to instantaneously match the demand at that precise moment'.⁶² There are two CDECs that determine optimum generation levels for Chile's two main electrical systems, the Central Interconnected System (Sistema Interconectada Central (CDEC-SIC)) and the Northern Interconnected System (Sistema Interconectada del Norte Grande de Chile (CDEC-SING)). The SIC accounts for approximately 75 per cent of Chile's installed capacity, serves over 90 per cent of Chile's population and covers the geographical area between the Antofagasta Region in the north and the Los Lagos Region in the south.⁶³ The SING operates in northern Chile and represents approximately 25 per cent of Chile's installed capacity, mainly

60 *Ibid.*

61 Bauer 2009, n 22 above.

62 Manuel Prieto and Carl Bauer, 'Hydroelectric power generation in Chile: an institutional critique of the neutrality of market mechanisms' (2012) 37(2) *Water International* 131, 139. The CDECs have a range of other roles and objectives. These include: guaranteeing easement rights over transmission systems established by concession; ensuring the safety of electrical system services; calculating spot market electricity prices; and informing other institutions of facility failures or other situations that may affect the normal operations of the electricity system. 'Quiénes somos' (Centro de Despacho Económico de Carga Sistema Interconectada Central) www.cdec-sic.cl accessed 14 November 2013.

63 'SIC Installed Capacity' (Central Energía, updated 30 October 2012) www.centralenergia.cl/en/power-plants-chile/sic-installed-capacity accessed 2 December 2013.

powered by thermoelectric plants.⁶⁴ Chile has two much smaller electrical systems, the Aysén and Magallanes Interconnected Systems, which produce little energy and do not have distinct CDECs (see map, Annex 5).

The CDECs are not government entities. Rather, they are autonomous private organisations with public functions whose directors represent the main energy companies.⁶⁵ Given this structure, and the importance that the CDECs' decisions have for the electricity sector, their independence is often questioned.⁶⁶

The SEC is the main vehicle for enforcing companies' compliance with government laws and regulations. It took its current form in 1985, through Law No 18.410. The SEC oversees compliance with norms, regulations and technical standards for the generation, production, storage and distribution of all fuels and electricity.⁶⁷ It is also charged with granting concessions required for power plants, electricity substations and transmission and distribution lines. In 1999, Law 19.613 strengthened the SEC's regulatory authority by allowing it to impose fines and censures for non-compliance with legal and technical obligations. It can also suspend permits temporarily or permanently. These sanctions can only be imposed on companies that supply energy to the CDECs.

Finally, the Ministry of Energy was established through Law 20.402 of 2010 as the primary energy-related institution working directly with the President of Chile. Its main objective is 'to draft and coordinate plans, policies and norms for the functioning and development of the [energy] sector, ensure their observance and advise the Government on all issues related to energy'.⁶⁸

Through the Ministry of Energy (and prior to its creation, the CNE), the executive branch can issue a national energy strategy. This is one of the government's main indicative energy planning instruments,⁶⁹ but it does not

64 'SING installed capacity' (Central Energía, updated 4 October 2012) www.centralenergia.cl/en/power-plants-chile/sing-installed-capacity accessed 2 December 2013.

65 Bauer 2009, n 22 above, 619.

66 Hugh Rudnick, *Un Nuevo Operador Independiente de los Mercados Eléctricos Chilenos* (Estudios Públicos 2006), 101. In fact, some companies have created subsidiaries in order to gain additional representation on the CDECs, which has further complicated and put into question the legitimacy of the body's decision-making processes.

67 Ley 18.410 Creates the Superintendence of Electricity and Fuels (*Crea la Superintendencia de Electricidad y Combustibles*) 1985, Art 2.

68 'Objetivos y Funciones' (Ministerio de Energía) www.minenergia.cl/ministerio/objetivos-y-funciones.html accessed 20 November 2013.

69 In May 2014, the Bachelet administration announced its energy 'agenda', which includes plans to create a new indicative energy planning instrument for the regional level and to conduct a process to prioritise basins for hydropower generation. See 'Agenda de Energía: Un desafío país; progreso para todos' (Ministerio de Energía) www.minenergia.cl/documentos/estudios/2014/agenda-de-energia-un-desafio-pais.html accessed 25 May 2014.

necessarily drive private investment decisions. The 2008 and 2012 national energy strategies⁷⁰ were based on the assumption that Chile needs additional energy to support continued economic growth, so they focused primarily on how to generate more energy. For example, the Piñera administration's 2012 energy strategy describes hydropower as one of its policy 'pillars', stating: 'Water is a major component of our electricity matrix, and in 2011 represented almost 35 per cent of the energy produced. We are, therefore, decidedly promoting its development because of the great potential offered by this resource.'⁷¹ The administration's stated goal was to increase hydropower to 45–48 per cent of the country's electricity matrix by 2024. The strategy does not, however, take into consideration the impacts that developing more hydropower will have on other water users, such as the agricultural sector. It does not mention the likely risks to Chile's water supplies, and therefore to hydropower, posed by climate change. Nor does it reference the potential negative impacts that major hydro projects are likely to have on localities, beyond mentioning the general need to 'work with local communities in order continue to strengthen their participation'.⁷² The failure of this and other recent energy strategies to account for the interconnections between hydropower generation and other sectors of Chilean society makes them incomplete.

The executive branch can also pursue congressional or unilateral measures to incentivise or facilitate private sector actions that support its preferred strategy. Among the unilateral measures the executive can take is the issuance of Executive Decrees, which have been used to facilitate the approval and implementation of energy infrastructure projects. Such decrees are not publicly debated, or even widely known or understood. For example, during her first term, President Michelle Bachelet issued a series of Executive Decrees that expanded the areas in which power plants can be sited to include 'almost anywhere'.⁷³ Some of these were issued in a way that appeared to permit the siting of specific projects facing public opposition

70 National Energy Strategy 2012, n 3 above; and 'Política Energética: Nuevos Lineamientos' (Comisión Nacional de Energía 2008) www.cne.cl/archivos_bajar/Politica_Energetica_Nuevos_Lineamientos_08.pdf accessed 15 September 2013.

71 National Energy Strategy 2012, n 3 above, 9.

72 *Ibid* 24. The strategy does recognise the 'exceptional conditions' of Chilean Patagonia and calls for a plan to 'broaden its protection and exclude any generation and transmission initiatives from areas with vast resources in exceptional natural conditions'. However, as recently as September 2013 a 640 MW hydro project was approved in the Patagonian Aysén Region. 'Comisión de Evaluación Ambiental de Aysén aprueba central Río Cuervo' *La Tercera* (Santiago 10 September 2013) www.latercera.com/noticia/negocios/2013/09/655-541960-9-comision-de-evaluacion-ambiental-de-aysen-aprueba-central-rio-cuervo.shtml accessed 20 September 2013.

73 Daniela Martínez, 'Opposition to Power Plants in Chile' (LLM Thesis, Harvard University 2012), 64.

and litigation. For instance, in 2009, after the Supreme Court overturned the environmental approvals for AES Gener's Campiche thermoelectric plant, the administration issued Executive Decree No 68.⁷⁴ This decree amended Chile's General Ordinance for Urbanism and Construction, the country's primary land use framework, to 'correct the issue that had been the basis for the Supreme Court's decision'.⁷⁵ As a result, the project received new environmental approvals.⁷⁶

Overall, these institutions and executive powers amount to a state with weak regulatory and planning roles in governing the private development of electricity. Although this framework was considered highly innovative at the time it was put in place, in practice it has proven problematic. For one thing, despite the liberalisation reforms, the generation subsector lacks competition. Just three companies, Endesa, AES Gener and Colbún, account for approximately two-thirds of Chile's installed generation capacity. This degree of concentration, and the resulting market distortions, will be discussed further below. Since decisions about project investments are in private hands, the national government is unable to ensure that the energy matrix is sufficiently diverse, or to prioritise and stimulate key investments (notwithstanding its executive decree power). Government authorities also lack the ability to manage energy project siting in a way that accounts for the different activities and attributes in each area.⁷⁷ There is no requirement that the government ensure that cross-sectoral impacts are adequately taken into account. Several of these shortcomings will be illustrated further in the governance outcomes section below.

Water governance

In the case of hydropower, it is as important to consider the frameworks that govern water rights as it is to understand the system for creating and regulating electricity. After all, any company interested in developing a hydro project must have the water required to generate electric power.

The military government privatised the water rights system in the early 1980s, in line with its other market-oriented reforms. Individual ownership of water rights was first established in the 1980 Political Constitution of

74 Executive Decree No 8, 31 December 2009.

75 Martínez, n 73 above, 55.

76 'Campiche: la termoeléctrica que Bachelet respaldó cediendo al lobby político norteamericano' *El Mostrador* (Santiago 7 October 2013) www.elmostrador.cl/pais/2013/10/07/campiche-la-termoelectrica-que-bachelet-respaldo-cediendo-al-lobby-politico-norteamericano accessed 7 October 2013.

77 In fact, Chile lacks any comprehensive land use planning frameworks. This is a source of conflict for energy infrastructure siting. Martínez, n 73 above.

the Republic of Chile, which is still in place today. In 1981, the military government issued DFL No 1.122, the Water Code, allowing private parties to request water rights from the General Water Directorate (DGA). These rights are not considered government concessions, but rather exclusive property rights that the owner may ‘use and enjoy’⁷⁸ as they see fit. Although the law did not directly establish a water market, it had this effect.⁷⁹

As Bauer explains, ‘applicants for new rights do not have to specify or justify their intended water uses to the DGA, and the agency is required to grant new rights free-of-charge if there is water physically available and legally unclaimed’.⁸⁰ Private sector forces are left to determine the ‘best’ uses of water resources. In other words, the law ‘does not establish any legal priorities among different kinds of water uses, such as domestic or agricultural uses, because such determinations are left to private individuals and the free market’.⁸¹ The DGA does not have the authority to choose among competing applications for new water rights, but rather must sell those rights to the highest bidder,⁸² although the president has the authority to intervene and has done so in some cases.

In fact, the DGA has very little regulatory authority. Its functions are mainly technical and administrative, for example generating hydrological data, preparing studies and making policy recommendations. Article 131 of the Water Code does require that the assignment of ‘any water right that may affect a third party must be published in the Official Newspaper’⁸³ within 30 days of receiving the right’, and Article 132 establishes that any third party who feels their rights are affected may oppose the assignment of that water right within 30 days of its publication. In these instances, the DGA is required to issue a decision. Otherwise, the DGA has no authority to resolve disputes among competing water users. Rather, conflicts over water rights are dealt with through the courts.⁸⁴

It is important to note that the Water Code distinguishes between ‘consumptive’ and ‘non-consumptive’ water rights. The water rights required for hydropower are non-consumptive. That is, they ‘permit the use of water without consuming it’,⁸⁵ and oblige the owner to return the water

78 Water Code, n 25 above, Art 6.

79 Juan Pablo Orrego, *Legislación e Institucionalidad para la Gestión de Las Aguas* (Terram Publicaciones 2002), 16.

80 Bauer 2009, n 22 above, 598–599.

81 *Ibid* 599.

82 *Ibid*.

83 The Official Newspaper (*Diario Oficial*) is similar to the Federal Register in the US.

84 Orrego, n 79 above.

85 Water Code, n 25 above, Art 14.

after using it. The Water Code specifies that the extraction and restitution of these waters must be done in a way that does not damage the rights of third parties ‘with regard to its quantity, quality, substance, opportunities for use and other particularities’.⁸⁶ In practice, however, this separation is problematic. As Prieto and Bauer put it, ‘the institutional difference between consumptive water rights and non-consumptive water rights creates two separate markets in which the externalities that hydropower imposes on other uses (eg, irrigation) can rarely be the object of bargaining’.⁸⁷ There is also evidence that the non-consumptive water market may not work in practice. For instance, once a company owns the non-consumptive water rights it needs to operate a hydro plant, there is little possibility that other potential users of those same rights (eg, a rafting company) can make a successful offer to buy a part or all of these rights, since selling even some of its water rights would be detrimental to the company’s ability to generate electric power. Whereas market forces can lead to efficiency in the case of consumptive rights, since consumers pay or perceive opportunity costs for the amount of water they use and can therefore be motivated to reduce consumption through conservation and recycling, this is not the case for non-consumptive water rights. These weaknesses in the existing framework make it difficult to successfully take advantage of hydropower potential in conjunction with other water uses.

In 2005, Law 20.017 was passed to modify certain aspects of the Water Code. One important change was the addition of Title XI, establishing fees for non-use of water in an attempt to prevent hoarding of water rights. Nevertheless, water rights owners still do not forfeit their rights if they do not use them. In other words, Chile does not have a ‘use it or lose it’ approach to water rights, the way most other countries do.⁸⁸ As a result, almost all of the country’s water rights are owned by private parties who are not compelled to use them, meaning that water can be physically available for different uses without being legally available for others who might actually use it. This, in turn, can create a false sense of water scarcity. Indeed, some water rights holders prefer to pay the fees for non-use rather than actually use their water, and in some cases they have been able to avoid the fees through legal loopholes. In this sense, the fees for non-use have proven ineffective in practice.⁸⁹ Nevertheless, at least in theory the introduction of fees for non-use has created an incentive that in some cases can drive water rights owners to rush to implement new activities,

86 *Ibid.*

87 Prieto and Bauer, n 62 above, 143.

88 *Ibid.*

89 Christian Valenzuela, Rodrigo Fuster and Alejandro León, ‘Chile: ¿Es eficaz la patente por no-uso de los derechos de agua?’ (Revista CEPAL 109, April 2013).

such as hydropower projects, that put their rights to use, potentially without due regard for the full range of impacts such activities might have.

In practice, the water rights system has proven highly problematic. It has led to the high concentration of rights in the hands of a few private companies, many of which are large multinational corporations. This is particularly the case with regard to the non-consumptive rights required for hydropower. As of 2010, 90 per cent of non-consumptive water rights were concentrated in the hands of three energy generation companies.⁹⁰ By some accounts Endesa alone owns 55 per cent of the non-consumptive water rights in Chile, and 98 per cent of the water rights in the Aysén Region, the region with the most hydropower potential.⁹¹ As already noted, Endesa's water rights were acquired at no cost during the process of privatisation. Moreover, the existing system takes little account of competing water uses and needs. There is no mechanism to ensure that the use of water for a particular hydropower project makes sense in light of other water-dependent activities nearby. Likewise, there is little emphasis placed on protecting ecosystems.⁹²

Governance outcomes: some examples

A few examples will illustrate the suboptimal outcomes of Chile's energy and water governance frameworks.

MARKET CONCENTRATION AND VERTICAL INTEGRATION

The existing privatised frameworks have led to extreme concentration. This is particularly problematic in the electricity generation segment, which is supposed to be competitive. As already noted, Endesa, AES Gener and Colbún account for approximately two-thirds of Chile's installed generation capacity, and Endesa owns a large proportion of the available non-consumptive water rights that can be used for electricity generation. This degree of concentration is the legacy of these companies being 'descendants' of the vertically integrated, state-owned companies Endesa and Chilectra. Since these companies maintained the bulk of their property rights at the time of

90 Sara Larraín, 'Agua, derechos humanos y reglas del mercado' in Sara Larraín and Pamela Poo (eds), *Conflictos por el agua en Chile: Entre los derechos humanos y las reglas del mercado* (Gráfica Andes 2010), 15–49.

91 Prieto and Bauer, n 62 above, 136–137.

92 A few minor changes were included in the 2005 modification to address protection of ecosystems. In particular, the DGA is now required to safeguard 'the preservation of nature and the protection of the environment', for example by establishing a minimum flow level in rivers, which may not exceed 20 per cent of the average annual flow (Ley 20.017 Modifica el Código de Aguas 2005, Art 129 bis 1).

their privatisation, they continued to dominate, although they were now in private (not public) hands.

Moreover, vertical integration has proven persistent. By the mid-1990s, the private company Enersis was the largest shareholder of Endesa, Transelec and Chilectra, thereby dominating in generation, transmission and distribution, and ‘facilitating discrimination against competitors’.⁹³ It wasn’t until the Fiscalía Nacional Económico (FNE), the national agency charged with protecting free competition, forced Enersis to sell Transelec that this vertical integration began to weaken.⁹⁴ Nevertheless, Enersis continues to control Endesa and Chilectra (the country’s largest distributor), allowing it to maintain dominance, particularly in the capital region where almost half of the Chilean population is concentrated.

This extreme concentration and persistent vertical integration have led to major market distortions, with several negative consequences. They have proven a barrier to entry for new companies, including those seeking to implement innovative projects, such as small-scale hydro. They have also resulted in excessive prices for consumers. Moreover, they have made the energy sector as a whole less transparent, since the major energy companies can buy and sell electricity, services, or assets to their own subsidiaries – that is, to themselves – without it being clear to outside observers or consumers.

TRANSMISSION INEFFICIENCIES

The separation of the transmission subsector has led to inefficient results. Energy generation companies pay 80 per cent of electricity transmission costs via tolls to transmission companies (ie, Transelec⁹⁵); consumers pay the other 20 per cent.⁹⁶ This arrangement gives generation companies a high degree of influence over the transmission subsector. These companies have an interest in keeping transmission costs low, and they lack an incentive to expand the transmission network to facilitate access for new players.⁹⁷

93 Maria Victoria Murillo and Carmen Le Foulon, ‘Crisis and Policymaking in Latin America: The Case of Chile’s 1998-99 Electricity Crisis’ (2006) 34 *World Development* 4–5.

94 Transelec, *Uniendo a Chile con Energía: la historia de Transelec* (Transelec 2011).

95 Transelec SA (which was formerly the transmission arm of Endesa) transports electricity to 98 per cent of Chile’s population via 8,312 km of transmission lines extending from Arica to Chiloé. *Ibid* 116.

96 Hugh Rudnick, Juan A Araneda and Sebastian Mocarquer, ‘Transmission planning – From a market approach to a centralized one – The Chilean experience’ (paper prepared for the 2009 IEEE General Meeting) <http://web.ing.puc.cl/~power/paperspdf/RudnickAranedaMocarquer.pdf> accessed 14 January 2014, 4.

97 See, eg, Mauricio Zanotti, ‘Carretera Eléctrica, ¿Qué impacto tendrá en Chile?’ *Guioteca* (Santiago 24 April 2012) www.guioteca.com/energia-y-sustentabilidad/carretera-electrica-que-impacto-tendra-en-el-sistema-energetico-de-chile accessed 7 January 2014.

As a result, there has been insufficient investment in transmission, leaving some projects (including non-conventional renewable energy projects) paralysed because of a lack of interconnection.⁹⁸

The government has proven unable to successfully stimulate or guide investments in the transmission system. Although Short Law I of 2004 aimed to stimulate more investment in the transmission sector, so far it has not been successful. Government efforts to play a more direct role in transmission development have also been inhibited. For example, after the most recent CNE trunk transmission study identified the need to interconnect the SIC and the SING, the Piñera administration announced plans to open a public bidding process to carry out this project. A group of energy companies, including Colbún and AES Gener,⁹⁹ opposed the government initiative. They successfully argued before a tribunal that the CNE does not possess legal authority to implement such a project, thereby halting the effort despite its importance for the long-term development of Chile's electricity system.

ARGENTINE NATURAL GAS CRISIS

Chile and Argentina share more than 3,000 kilometres of common border. Unlike Chile, Argentina is endowed with considerable hydrocarbon resources. Accordingly, establishing a business relationship based on Argentine export of natural gas to Chile was attractive to both countries. In 1991, their governments signed Economic Complementation Agreement No 16, which included a special protocol on the interconnection of the natural gas supply.¹⁰⁰ Afterwards, the private consortium Gas Andes built an ambitious project that delivered Argentine gas directly to Chile's capital. The new pipeline, ancillary power plants and distribution systems began operating in 1997. In 1998 and 1999, private companies built three more gas pipelines across the Andes. For a time, the Argentine gas boom produced positive results for both countries.

In 2001, Argentina's economy collapsed. The Argentine Government froze the prices of certain basic goods and services, including natural gas.¹⁰¹ In response, Argentine gas companies lowered production levels and

98 *Ibid.*

99 Gustavo Orellana, 'Panel de Expertos declara fuera de la ley plan de la CNE de conexión SING-SIC' *Pulso* (Santiago 15 March 2013) www.pulso.cl/noticia/empresa-mercado/empresa/2013/03/11-19738-9-panel-de-expertos-declara-fuera-de-la-ley-plan-de-la-cne-de-conexion-singsic.shtml accessed 7 January 2014. The other companies were Guacolda and Doña Inés de Collahuasi.

100 Hernán F Errazuriz, 'La Frustrada integración Gasífera entre Chile y Argentina: orígenes, crisis y lecciones' in *Gas Natural: Lecciones de una Crisis* (Ediciones LYD 2008).

101 Hernán Lacasa, 'Liderazgos Políticos y Relaciones Internacionales: Crisis Energética entre Argentina y Chile' (2008) 4 *Revista de Ciencia Política*.

investments in new exploration and development, decreasing the overall supply. Once Argentina's economy began to recover, the domestic demand for gas as an artificially cheap energy option shot up. The resulting mismatch in supply and demand led the Argentine Government in 2004 to place restrictions on natural gas exports, a means of protecting domestic consumption that led to shortfalls in Chile's energy supply.¹⁰²

The gas shut-offs were disastrous for Chile. The overinvestment of the 1990s meant that by 2008, only four per cent of the transport capacity was used. Investors took major losses, which were passed on to electricity consumers through historically high rates. The sudden reduction in the availability of natural gas left the leading energy companies scrambling to ramp up alternative means of production, including reservoir hydro, at high cost and inconvenience to consumers.

This situation illustrates several weaknesses in the existing governance framework. In this case, leaving choices about energy generation sources entirely in the hands of private sector actors led to an irrational overinvestment in a single generation source, without due consideration of political and economic risks. The government's weak planning role meant that it was unable to avoid or mitigate the crisis by driving the selection of more appropriate projects or ensuring that sufficient alternative generation sources were available. Instead, the government's ability to intervene was limited to steps like issuing new regulations for gas distribution during periods of restricted supply. The impotence of the state raises questions about how future crises or problems with emblematic projects might be managed.

Key issues

Some of Chile's energy governance challenges have to do with the nature of electricity. Unlike other secondary source energies (such as gasoline), electricity can be produced utilising any form of primary energy, including fossil fuels, hydropower, solar, wind and so on. Although this is in some ways an advantage, it also increases the complexity of ensuring 'good governance' of the electricity sector. Governance frameworks in a liberalised economy need to take account of the interrelationships between the electricity markets and the markets of the different primary energy options for electricity generation.

Other governance challenges have to do with the frameworks in place today. There are three key concerns in this regard. First, governance

¹⁰² Chile could not fill the shortfall in Argentine gas through imports from Bolivia or Peru owing to poor relations with those countries. Carlos Huneeus, 'Argentina y Chile: el conflicto del gas, factores de política interna Argentina' (2007) 158 *Estudios Internacionales* 179, 196.

frameworks have been unable to correct persistent market distortions that have blocked new and potentially innovative projects. Secondly, the state's weak governance role makes it unable to ensure that the energy sector is sufficiently developed and resilient, or that different generation sources and water uses are appropriately prioritised. Thirdly, the reliance on the private sector to generate electricity means that non-market concerns are not adequately accounted for in decisions about whether and how projects should be built (with the exception of environmental laws, which will be discussed in the next section). As a result, Chile's energy and water governance frameworks do not ensure that the best projects will be built to meet short-term and long-term goals.

Environmental and social impact assessment

At the outset of this article, we said that the development of hydropower projects creates winners and losers. The 'winners' typically include investors and local recipients of economic benefits. The energy generated by these projects supports Chile's economy, contributing to its development. The 'losers' include those who find themselves with fewer natural resources (such as water), who experience negative impacts (such as noise and pollution), some who are physically displaced (for example, by flooding) and others (including future generations) whose ability to enjoy the natural beauty of the country is damaged. Some projects harm local ecosystems. Any large-scale infrastructure project is bound to create 'winners and losers' because there is no single 'correct' or 'best' thing to do for everyone. Trade-offs must be made.

Decisions about hydropower projects ought to take account of these trade-offs by balancing environmental, social and economic considerations. For example, economic development objectives ought to be weighed against the need to maintain a sustainable supply of natural resources. This requires consideration of numerous sectoral impacts simultaneously. How can energy and agricultural needs be met while protecting irreplaceable freshwater supplies? How should the long-term and short-term interests of different groups be taken into account? The Chilean system does not provide adequate opportunities to address these kinds of questions when decisions around building hydropower projects are taken.

The flawed logic of the Chilean system

The underlying logic of Chile's framework for generating hydropower is

fundamentally flawed. Under the privatised electricity generation system, companies put forward project proposals, together with impact studies and plans to mitigate projected environmental and social impacts.¹⁰³ The proponents' studies are submitted to the Environmental Impact Assessment System (Servicio de Evaluación de Impacto Ambiental (SEIA)) for review. The SEIA is the only government mechanism that forces review of potential project impacts; as we have described, there are no governance frameworks in place that require earlier consideration of project costs and benefits, or justifications for project proposals in terms of broader energy policy objectives. Yet, by the time a project reaches the SEIA, project designs are locked in and substantial investments have been made. Once a project reaches the SEIA, the burden of proof is placed on those who feel that impacts are unacceptable to 'demonstrate' that the costs to some people or to the environment argue for no project, or for severe limitations on a project's scale. Very little time is allotted for public participation in discussions of project impacts. Ultimately, if government regulators believe that a project complies with relevant laws and 'adequately' addresses whatever impacts the proponent has identified, the project is approved.

In this way, the Chilean system only leads to consideration of environmental and social impacts *after* investment decisions have been made. There is no serious consideration of the full array of costs and benefits to different people and sectors over an extended period of time. Moreover, the SEIA is itself deeply flawed. It was not designed to reconcile or balance the trade-offs inherent in developing hydropower projects. On the other hand, it is the only formal mechanism for bringing such trade-offs to light. As a result, environmental impact assessment has become the focal point of hydropower disputes in Chile.

Environmental impact assessment

Environmental impact assessment (EIA) started in the US after the passage of the National Environmental Policy Act (NEPA) of 1969.¹⁰⁴ Under this system, federal government agencies (not private sector proponents, as in Chile) are required to review the likely impacts of proposed actions that might cause significant environmental harm before decisions to implement such actions are taken. These actions include construction of publicly owned infrastructure projects and issuance of government permits for projects that

¹⁰³ Typically, private consultants hired by the project proponent carry out these impact studies and propose mitigation measures. There is no public registry that ensures the quality and independence of these firms.

¹⁰⁴ National Environmental Policy Act of 1969 (42 USCA s 4331 et seq).

are privately developed.¹⁰⁵ NEPA places a burden on project proponents to consider multiple alternatives for meeting whatever need underlies a proposed project, including different technologies, designs or location options. The option of *not* pursuing the project (the 'No Build Alternative') must always be considered. Proponents are required to forecast the likely impacts of each alternative.

The NEPA process requires extensive public engagement, starting with the scoping of initial impact studies. That is, the proponent must engage interested stakeholders and the general public in deciding which options and impacts to consider in its studies. Public participation is required in reviewing draft forecasts and analyses of likely impacts, in demonstrating how mitigation measures might be used to reduce or compensate for adverse impacts, and in evaluating written impact studies before they are approved. During each step in the evaluation process, NEPA sets minimum public comment periods of 30 or 45 days. These are commonly extended, especially for complex projects.

Ultimately, the relevant government agency must issue a formal Record of Decision spelling out its reasoning. Those who feel the agency has failed to fulfil the objectives of NEPA can go to court to contest the final record of decision.¹⁰⁶ Although the NEPA system has been criticised for leading to litigation that slows down development and makes projects more costly,¹⁰⁷ allowing for the contestation of final decisions strengthens the legitimacy of all EIAs. Moreover, implementing effective and sufficiently participatory evaluation processes has helped lessen the need to address public concerns via lawsuits filed against final decisions.¹⁰⁸

The worldwide adoption of EIA has led to more and better integration of environmental considerations into project planning and design. It has also provided better information to decision-makers, and has promoted innovative approaches to dispute resolution.¹⁰⁹ EIA processes have led to modifications of initial plans, altered the perceived impacts of projects, and led to greater cooperation and coordination among parties involved in decision-making.¹¹⁰

105 Council of Environmental Quality, *A Citizen's Guide to the NEPA: Having Your Voice Heard* (Executive Office of the President 2007).

106 John Glasson, Riki Therivel and Andrew Chadwick, *Introduction to Environmental Impact Assessment*, 4th edn (Routledge 2012); Charles Eccleston, *Environmental Impact Assessment: A Guide to Best Professional Practices* (CHC Press 2011).

107 Jim Vines, Stephanie Salek and Kelsey Deslover, 'Dispute Resolution: Tort Litigation: Reforming NEPA Review of Energy Projects' (King & Spalding Energy Newsletter, 5 December 2012) www.jdsupra.com/legalnews/dispute-resolution-tort-litigation-ref-95969 accessed 20 September 2013.

108 Barry Sadler, *International Study of the Effectiveness of Environmental Assessment* (International Agency on Impact Assessment and Canadian Environmental Assessment Agency 1996), 50.

109 *Ibid.*

110 *Ibid.* Also US Council on Environmental Quality, *The National Environmental Policy Act: A Study of its Effectiveness After Twenty-five Years* (Executive Office of the President 1997).

Given these benefits, NEPA 'has proven to be one of the United States' most widely imitated statutes. In addition to inspiring numerous 'little NEPAs' within states of the US, it has served as a template for domestic EIA legislation in over 130 nations around the globe.¹¹¹ It has also inspired a range of international EIA agreements that call on countries to take account of environmental impacts on neighbouring countries.

EIA IN CHILE

In Chile, EIA is carried out through the Environmental Impact Assessment System (SEIA), established through Law No 19.300 of 1994.¹¹² According to a government website, 1,005 EIAs have been submitted to the SEIA to date. Of these, 648 have been approved and 47 have been rejected, while 71 are under evaluation and 239 are in 'another state', meaning they have been withdrawn or did not meet technical requirements for submission to the SEIA.¹¹³

In 2010, Congress passed Law No 20.417¹¹⁴ to amend Law 19.300. Among other changes, Law 20.417 created a new set of environmental institutions: the Environment Ministry (Ministerio de Medio Ambiente (MMA)), the Environmental Assessment Service (Servicio de Evaluación Ambiental (SEA)), the Environment Superintendence (Superintendencia del Medio Ambiente) and Environmental Tribunals (Tribunales Ambientales). The SEA is now charged with administering the SEIA. Law 19.300 is supplemented by several sets of bylaws (reglamentos) that describe in more detail how various aspects of the law should be implemented. The RSEIA are the bylaws that correspond to the SEIA. In November 2013, an updated RSEIA took effect to reflect changes put in place by Law 20.417.¹¹⁵

Article 10 of Law 19.300 (as amended) outlines the projects and activities that must be submitted for environmental review. These include all energy generation projects above 3 MW, as well as 'aqueducts, reservoirs and siphons...

111 Charles M Kersten, 'Rethinking Transboundary Environmental Impact Assessment' (2009) 34 *Yale Journal of International Law* 173, 177.

112 Ley 19.300 Sobre Bases Generales del Medio Ambiente 1994. Hereafter cited as Law 19.300. This law took effect in 1997.

113 These numbers do not include impact evaluation declarations (DIAs). 'Mapa de proyectos en EIA con Líneas Base' (Servicio de Evaluación Ambiental) www.sea.gob.cl/contenido/mapa-de-proyectos-eia-con-lineas-de-bases accessed 24 September 2013.

114 Ley 20.417 Crea el Ministerio, El Servicio de Evaluación Ambiental y la Superintendencia del Medio Ambiente 2010.

115 'Se publicó el nuevo Reglamento del Sistema de Evaluación de Impacto Ambiental' (Servicio de Evaluación Ambiental 12 August 2013) www.sea.gob.cl/noticias/se-publico-el-nuevo-reglamento-del-sistema-de-evaluacion-de-impacto-ambiental accessed 24 September 2013.

dams, drainage, drying, dredging, barriers or significant alterations of natural water bodies and courses'.¹¹⁶ Proponents whose projects fall under these and the other named categories must prepare either an EIA or an environmental impact declaration (Declaración de Impacto Ambiental (DIA)), depending on the degree of impact anticipated. EIAs correspond to projects with higher impacts, and therefore require more rigorous studies than DIAs.¹¹⁷ The EIA or DIA must describe the anticipated impacts of the project, as well as proposed mitigation, compensation or reparation measures to address the impacts identified. Once an EIA or DIA is prepared, it is submitted to the SEA for review. The project is approved if it 'complies with Chile's environmental laws' and addresses the impacts identified through 'appropriate mitigation, compensation or reparation measures'.¹¹⁸ Otherwise, it is rejected.

The final decision, called the environmental qualification resolution (Resolución de Calificación Ambiental (RCA)), is taken by a committee that includes the Regional Governor, the Regional Director of the SEA, and regional representatives of several ministries.¹¹⁹ Each of these evaluators is appointed by Chile's president, a fact that has raised concerns about the committee's ability to take independent decisions that are technically valid and free from political pressure imposed by the executive.¹²⁰ Although the committee is required to solicit input from county and municipal authorities in the area of potential impact,¹²¹ there is no requirement that the proposed project be compatible with local development policies or plans. The lack of 'real' (ie, not appointed by the executive) regional or local representation on the decision-making committees makes it difficult for elected local authorities to have a meaningful say in the approval of projects. This has been a point of contention, in some cases leading local authorities to complain about EIA decision-making processes and their results.¹²²

The decision-making committee is also required to consider public input on all EIAs and certain DIAs. When public input is required, Law 19.300 states that the SEA must 'consider the public comments as part of the approval process and must address them, providing substantiated responses to all of them in

116 Law 19.300, n 112 above, Art 10(a).

117 Article 11 of Law 19.300 establishes which types of projects require the more rigorous EIA.

118 Law 19.300, n 112 above, Art 16.

119 *Ibid* Art 86.

120 See, for example: Natural Resources Defense Council (NRDC), *Fortalecimiento del Sistema de Evaluación de Impacto Ambiental de Chile: lecciones de la legislación internacional* (NRDC 2011).

121 Law 19.300, n 112 above, Art 9 ter.

122 See, eg, 'Concejo municipal solicita transparencia en evaluación de proyecto Hidroaysén' *Emol* (Santiago 5 May 2011) www.emol.com/noticias/economia/2011/05/05/479910/concejo-municipal-solicita-transparencia-en-evaluacion-de-proyecto-hidroaysen.html accessed 10 October 2014.

the final decision'.¹²³ The opportunities for citizen participation, however, are very limited. The public can participate only after an EIA/DIA is fully developed – there is no public input in the scoping of the EIA/DIA, no public consideration of project alternatives and no public participation in analysing preliminary studies or findings. In the case of an EIA, the participation period is 60 business days. During this time, members of the public can submit comments, in writing only, to the SEA. In the case of a DIA, a public participation process can only be initiated at the request of at least two civil society organisations or ten directly affected individuals, as long as the request is made within ten days of the project's publication in the *Official Newspaper*. If such a process is initiated, the public comment period is only 20 business days. Unlike the NEPA system, these are maximum – not minimum – participation periods. The brevity of the comment period makes it difficult for members of the public to formulate compelling responses to technical studies and plans, which tend to be highly complex and lengthy, especially in the case of larger projects that require EIAs. Stakeholders are not provided with resources to cover the cost of the technical help they might need.

During the public comment period, the SEA must conduct 'informational activities in the community' and provide 'an opportunity for the proponent to meet with the community, so that they can provide the community with information about the project or activity'.¹²⁴ In practice, this means that the SEA's citizen participation unit convenes and moderates a single public meeting in each affected community, during which members of that community learn about the project but are not able to provide meaningful feedback or exercise influence over the project's design or implementation. After all, only written comments are accepted in the SEIA process.

Law 19.300 allows for legal recourse if members of the public believe their comments have not been adequately considered. Indeed, legal actions against RCAs are proliferating.¹²⁵ Public protests against projects are also becoming increasingly common.¹²⁶ HidroAysén is perhaps emblematic as;

¹²³ Law 19.300, n 112 above, Art 29.

¹²⁴ Reglamento del Sistema de Evaluación de Impacto Ambiental 2013, Art 83. Hereafter cited as RSEIA.

¹²⁵ Martínez, n 73 above, 16. Twenty-nine per cent of all projects approved by the SEIA between 2010 and 2013 have been contested in the courts, according to C Pérez Cueto and A Astudillo, 'El 29% de proyectos con EIA favorable se judicializó en los últimos cuatro años' *La Tercera* (2 November 2013) Negocios 28.

¹²⁶ Of 222 electricity generation projects submitted to the SEIA between January 2000 and June 2011, 153 'presented some kind of conflict', according to Comité Editorial Comisión Ciudadana Técnico-Parlamentaria para la Política y la Matriz Eléctrica, *Chile necesita una gran reforma energética: propuestas de la comisión ciudadana-técnico-parlamentaria para la transición hacia un desarrollo eléctrico limpio, seguro, sustentable y justo* (Comisión Ciudadana Técnico-Parlamentaria para la Política y la Matriz Eléctrica 2011), 15.

of December 2011 it was facing 23 legal challenges,¹²⁷ and it was the subject of some of the most widespread protests in recent Chilean history.¹²⁸ The lack of meaningful participation in SEIA decisions is often identified as a key source of these political and legal challenges.¹²⁹ Although there have been some cases in which public opposition and litigation have successfully halted projects, such as the SN Power projects described earlier,¹³⁰ for the most part this has not been the case.

Social impact assessment

Most EIA laws around the world were originally focused on the natural environment. It quickly became apparent, however, that impacts on culture, community structure, economy and other social considerations should also be given consideration. As a result, social impact assessment (SIA) evolved alongside EIA.¹³¹

In practice, it is common for SIA to be contained within EIA laws. In the US, for example, social impact assessment is guided by statutes and requirements that are embedded within EIA legislation. According to these requirements, studies must consider a project's impacts on social dimensions such as demographic mix, community and institutional structures, and threats to cultural practices.¹³² In Europe, SIAs are carried out as part of Integrated Impact Assessments, which almost always address socio-economic impacts, such as impacts on jobs and housing prices.¹³³

In Chile, consideration of certain social impacts is achieved through the SEIA. Article 11 of Law 19.300 outlines the kinds of impacts that trigger the

127 Martinez, n 73 above, 6–7.

128 Alexei Barrionuevo, 'Plan for Hydroelectric Dam in Patagonia Outrages Chileans' *The New York Times* (17 June 2011) A4.

129 Even the SEA has recognised lack of participation as a source of conflict associated with projects submitted to the SEIA. See Servicio de Evaluación Ambiental, *Guía de Buenas Prácticas en las Relaciones entre los Actores Involucrados en Proyectos que se Presentan al SEIA* (Servicio de Evaluación Ambiental 2013), 13.

130 In the case of SN Power, litigation was in fact minimal and was related to minor things, such as property invasion. This probably had to do with the fact that the project was never approved by the government.

131 Hank Becker and Frank Vanclay (eds), *The International Handbook of Social Impact Assessment* (Edward Elgar Publishers 2003).

132 Interorganizational Committee on Guidelines and Principles for Social Impact Assessment, *Guidelines and principles for social impact assessment* (US Department of Commerce, US National Oceanic and Atmospheric Administration and US National Marine Fisheries Service, Washington DC 1994).

133 Evaluation Partnership and Centre for European Policy Studies, *Study on Social Impact Assessment as a tool for social inclusion and social protection concerns in public policy in EU Member States* (European Commission 2010).

preparation of an EIA. These include some social impacts: resettlement of communities or significant alteration of customs and ways of life; impacts to protected populations, primarily indigenous groups;¹³⁴ and alteration of monuments and sites of anthropological, archaeological, historical or cultural value. To help identify social impacts, proponents are required to carry out baseline studies of 'human resources' that analyse factors such as presence and geographical distribution of humans in the area of influence and the demographic characteristics of those groups. Proponents must consider additional dimensions with regard to indigenous peoples, such as cultural practices and value systems.¹³⁵ SIAs typically include a description of the communities affected and information about specific impacts, such as the number and characteristics of people who will need to be relocated (if any), the presence of any archaeological sites, and projected loss of livelihoods.

As with EIAs, project proponents are required to explain what mitigation, compensation or reparation measures they plan to take with regard to the social impacts identified. These can include agreements negotiated with stakeholders prior to submitting a project to the SEIA. Indeed, the RSEIA states that any agreement negotiated with stakeholders prior to or during the impact assessment process must be communicated to the environmental authorities.¹³⁶ These agreements can subsequently be incorporated into the RCA, thereby becoming a stipulation of the project's approval (if the RCA is positive). That said, the RSEIA indicates that negotiated agreements will not prejudice the decision of the evaluation committee.¹³⁷ Presumably, this stipulation is intended to ensure that decisions are taken based on technically sound EIAs and SIAs, rather than simply the proponent's ability to 'buy off' stakeholders.

There is anecdotal evidence to suggest that proponents are increasingly seeking negotiated agreements both before and after submitting projects to the SEIA. For example, Colbún recently implemented a resettlement plan negotiated with 43 families whose land was then inundated by the Angostura Hydroelectric Project.¹³⁸ This plan included agreements negotiated separately with each family. These provided for acquisition of new land, work training

134 Article 8 of the RSEIA clarifies that protected populations are understood to be indigenous peoples, regardless of their 'form of organization'.

135 RSEIA, n 124 above, Art 18.

136 *Ibid* Art 17.

137 *Ibid*.

138 Colbún and Arcadis Geotecnia, 'Estudio de Impacto Ambiental Proyecto Central Hidroeléctrica Angostura' (CIPER Chile, 2008) http://ciperchile.cl/wp-content/uploads/eia_colbun.pdf accessed 23 September 2013, 23. About one-third of the resettled families are Mapuche Pehuenche families, many of whom were forced to leave their lands due to the construction of Ralco. Instituto Nacional de Derechos Humanos, n 47 above, 224–227.

opportunities and medium-term psychological support, among other provisions. According to Colbún's Public Affairs Chief for the Bío Bío Region, the company's ability to negotiate agreements with all of the affected families allowed it to avoid having to change the project design and resubmit the project to the SEIA.¹³⁹ The 316 MW project is now operational.¹⁴⁰

Key issues

Chile's existing impact assessment frameworks do not bolster comprehensive resource management. There are three key concerns in this regard. First, the market-based approach to electricity generation only ensures that a narrow definition of cost and benefit is applied to project-specific investment decisions. The broader implications of a project for a full array of stakeholders, natural resources across sectors and national energy security are not adequately taken into account. Secondly, the timing of the environmental and SIA process, combined with the lack of robust government regulation or planning, means that the 'costs' of a project are considered far too late in the project development cycle, only after key project and investment decisions have been made. Finally, the weaknesses of the SEIA – including the lack of adequate participation opportunities, consideration of alternatives and emphasis on high quality independent technical analyses – mean that environmental approvals are often seen as illegitimate. In short, Chile's impact assessment frameworks do not facilitate balanced decision-making about whether and how to build hydropower projects.

Hydropower and indigenous peoples' rights: the case of the Mapuche

With a population of one million, the Mapuche people represent the largest indigenous group in Chile. The Mapuche ancestral territory is located in the central southern part of Chile (see annexes 1 and 2), an area abundant in rivers flowing from the Andes to the Pacific. In recent years private investors, with support from the Chilean State, have built, or planned to build, hydro dams on most of these rivers, in lands owned or claimed by the Mapuche (see annexes 3 and 4). These land claims are mainly grounded on legal titles

139 'Colbún cierra relocalización de familias con plan pionero en Chile' *El Sur* (Concepción 11 August 2013), 10.

140 'Colbún pone a operar mayor hidroeléctrica de embalse en 10 años' *La Tercera* (Santiago 19 March 2013) <http://diario.latercera.com/2014/03/19/01/contenido/negocios/10-160216-9-colbun-pone-a-operar-mayor-hidroelectrica-de-embalse-en-10-anos.shtml> accessed 25 May 2014.

granted by the state to the Mapuche in the 19th and 20th centuries¹⁴¹ or on Mapuche traditional land occupation.

The cases described at the outset of this article (Ralco, the SN Power projects, Neltume and HidroAysén) are all examples of major hydropower projects with serious impacts on Mapuche communities (in the latter case, owing to the potential impact of the project's required transmission lines). Many other hydro projects have also been proposed in areas that are legally owned or claimed by Mapuche communities. Currently, more than 30 hydro projects are pending approval by environmental authorities in the Bío Bío, Araucanía and Los Ríos Regions, where the traditional Mapuche lands are located. Many of these projects stand to have a serious impact on the Mapuche.

Existing laws have not established adequate mechanisms for consulting with indigenous peoples affected by these developments, as required by ILO Convention 169, nor have they established adequate protection of indigenous rights over natural resources. As a result, common features of these projects are a lack of adequate consultation with the directly affected indigenous communities during project development, a lack of compensation for damages caused and the absence of mechanisms to ensure that affected communities can participate in benefits that projects generate. These gaps must be addressed, and the underlying legal frameworks need to be strengthened to better respect the rights of indigenous peoples during the development of hydropower projects.

Chile's legal framework concerning indigenous peoples

Until recently, the legal framework for indigenous peoples in Chile comprised Law No 19.253 of 1993 (the so-called 'Indigenous Law'), which sought the 'protection, promotion and development of indigenous people'. This law recognised Chile as a multicultural society composed of different indigenous 'ethnic' groups and communities (not peoples). It created the National Agency for Indigenous Development (Corporación Nacional de Desarrollo Indígena (CONADI)) as the state agency in charge of policies related to indigenous peoples. It also created mechanisms to protect lands that the state had allocated to indigenous peoples in the past, including tax exemptions, prohibitions on selling or renting these lands to non-indigenous users and restrictions on the subdivision of communal lands. Law 19.253 also created

141 In the late 19th and early 20th centuries, the Chilean State granted 3,000 land titles (*títulos de merced*) to the Mapuche, acknowledging their communal property rights over half a million hectares, or five per cent of their traditional territory. Most of these land titles have since been subdivided into small individual plots.

a land and water fund with state financial resources and state-owned land and water, which has been used to buy or transfer land and water rights to indigenous individuals or communities who depend upon them for their livelihood.¹⁴² In fact, most of the government's indigenous policies since the enactment of this law have focused on acquiring lands for indigenous communities or individuals, largely of Mapuche origin, at market value.¹⁴³

The shortcomings of Law 19.253 are significant. It failed to recognise indigenous peoples' traditional forms of organisation, instead imposing western-style communities and associations. It also did not recognise indigenous forms of control or government within their traditional territories. The law also failed to recognise indigenous peoples' rights over the natural resources in and on their lands. Instead, rights over natural resources continued to be regulated by sectoral laws.¹⁴⁴ These laws enabled the state to grant concessions to third parties, allowing them to exploit the resources involved.¹⁴⁵ Moreover, Law 19.253 only weakly addressed the state's duty to consult with indigenous peoples regarding decisions that might affect them; this obligation was never fully regulated.¹⁴⁶

The environmental law (Law 19.300 of 1994, as modified by Law 20.417 of 2010), described in the last section, is also relevant with regard to projects that affect indigenous peoples. The weaknesses in this framework's mandated public participation processes are even more acute when it comes to indigenous peoples. For one thing, until ILO Convention 169 was ratified in 2009, 'public participation' was implemented without distinguishing among sectors of society, including indigenous peoples. As a result, little effort was

142 Law 19.253 Establece Normas Sobre Protección, Fomento y Desarrollo de los Indígenas, y Crea la Corporación Nacional de Desarrollo Indígena 2008, Arts 12–22.

143 As of 2010, CONADI had purchased more than 100,000 hectares of land at market value for the Mapuche people in the south of Chile.

144 Relevant sectoral laws include: the Water Code (DFL 1.222 of 1981), the Mining Code (Law 18.248 of 1983), the General Fisheries and Agriculture Law (Law 18.892 of 1991) and the Law on Geothermal Energy Concessions (Law 19.657 of 2000). In accordance with these laws, although natural resources belong to the state, concessions of these resources made by the state are considered the property of those to whom they are conferred, a right protected by Chile's 1980 Political Constitution.

145 One exception is the customary water rights of the Andean peoples (including the Aymara, Quechua and Atacameneans), which have been recognised and should be regularised in their favour in accordance with Arts 64 and 3 transitory of Law 19.253. These rights have been reaffirmed in recent decisions of Chile's Supreme Court that recognised the ancestral water use of these peoples (*Toconce v ESSAN SA Rol 986* (2004) and *Comunidad Aymara Chusmiza – Usmagama v Empresa Embotelladora de Agua Mineral Chusmiza SA Rol 2480* (2008)). Such rights have not been recognised in the case of the Mapuche, either through legislation or by the judiciary.

146 Article 34 of Law 19.253 established that indigenous communities' opinions regarding state decisions on matters related to them had to be 'heard and considered'.

made to accommodate cultural and customary differences, such as language differences and communication preferences. Moreover, since the public comments received through the SEIA are not binding, they do not meet the consultation standards required by ILO Convention 169.

THE LEGAL SCENARIO POST-ILO CONVENTION 169

ILO Convention 169 on Indigenous and Tribal Peoples was ratified by Chile in 2008 and entered into force in 2009. This generated a new scenario for indigenous peoples' rights in Chile that is of special relevance for large developments that have an impact on indigenous lands and resources.

Convention 169 recognises indigenous peoples' rights to their lands, territories and natural resources. Territories are defined as including 'the total environment of the areas which the peoples concerned occupy or otherwise use' (Article 13.2). The Convention affirms the state's obligation to recognise 'the rights of ownership and possession of the peoples concerned over the lands which they traditionally occupy' (Article 14.1), and to adopt measures 'to safeguard the right of the peoples concerned to use lands not exclusively occupied by them, but to which they have traditionally had access for their subsistence and traditional activities' (Article 14.1). The Convention also mandates that states must 'identify the lands which the peoples concerned traditionally occupy', 'guarantee effective protection of their rights of ownership and possession' (Article 14.2) and adopt procedures within the national legal system 'to resolve land claims by the peoples concerned' (Article 14.3). ILO treaty bodies, particularly the Committee of Experts on the Application of Conventions and Recommendations, have highlighted that indigenous land ownership refers not only to lands previously recognised by the state, but also to those of ancestral occupation.¹⁴⁷ This distinction is

¹⁴⁷ In the context of a claim by the Union of Huichol Indigenous Communities of Jalisco, Mexico for the return of 22,000 hectares of land awarded by the federal government to agrarian groups in the 1960s to the Huichol community of San Andrés de Cohamiata, the Committee affirmed that 'Article 14 of Convention No. 169 provides that traditional occupation is in itself a source of rights'. It also stated that 'this means that if claims to land demonstrating traditional occupation cannot be settled, the land rights of indigenous peoples may be violated' (Committee of Experts on the Application of Conventions and Recommendations (CEACR) (2009/80th Session), in International Labour Organization, *Monitoring Indigenous and Tribal Peoples' Rights Through ILO Conventions: A compilation of ILO supervisory bodies' comments 2009-2010* (International Labour Organization 2010), 88). In its 2009 comments on Peru's Legislative Decree No 994, the same Committee noted that 'in accordance with the Convention, traditional occupation confers a right to the land regardless of whether or not such right has been recognized and that, consequently, Article 14 of the Convention protects not only the lands over which the peoples concerned already have title of ownership but also the lands they traditionally occupy' (*ibid* 111–112).

important for projects that affect lands claimed by indigenous peoples on the basis of traditional occupancy but that have not been recognised as their property by the state, which in the case of the Mapuche are significant.

Convention 169 also confers rights to natural resources, including the right to participation ‘in the use, management and conservation of these resources’ (Article 15.1). In addition, the Convention includes rights to be consulted ‘with a view to ascertaining whether and to what degree their interests would be prejudiced’, as well as rights to participate in benefits and to receive compensation for any damages caused by the exploration and exploitation of subsurface resources pertaining indigenous lands (Article 15.2). The Convention states that consultations with indigenous peoples in this case ‘shall be undertaken, in good faith and in a form appropriate to the circumstances, with the objective of achieving agreement or consent to the proposed measures’ (Article 6.2). Convention 169 establishes a higher standard than consultation when relocation of indigenous peoples is considered necessary, stipulating that in these cases, ‘relocation shall take place only with their free and informed consent’ (Article 16.2).

In 2000, Chile’s Constitutional Tribunal ruled that the consultation rights included in Convention 169 were self-executing.¹⁴⁸ Nevertheless, Congress has not yet enacted legislation establishing a mechanism to make this right effective. Until recently, consultation processes were governed by Supreme Decree No 124 of 2009, a bylaw that redirected consultation with indigenous peoples to sectoral laws, and in particular to the environmental law, whose shortcomings we have already described. In 2013, a new EIA regulation (Supreme Decree No 40 of 2013) was approved, establishing a procedure for consulting with indigenous peoples in the context of impact assessment. This regulation was not prepared with adequate consultation with indigenous peoples, and it has serious flaws. It only calls for consultation regarding administrative measures with ‘significant impact’ on indigenous peoples, not for other measures that ‘may affect them’ (as Article 6(1)(a) of Convention 169 requires). It excludes consultation on DIAs, limiting its focus to EIAs. It also excludes consultation on measures adopted by autonomous state entities, including municipalities and state-owned corporations. Finally, it does not recognise indigenous people’s right to free, prior and informed consent (FPIC), as required in some cases by Convention 169.

Since the approval of Convention 169, indigenous peoples have sued for the consultation rights it confers. Interestingly, courts that initially rejected indigenous claims if a project did not require resettlement or significant

148 Tribunal Constitucional Decisión Rol 309 (4 August 2000). The Tribunal, however, held that the consultation considered in Convention 169 was not legally binding, and it did not open space for a veto right.

alteration of lifestyle and customs (in accordance with Article 11 (c) of Law 19.300) have in recent years revised their jurisprudence on this matter. Since 2010, the Chilean Supreme Court has acknowledged in several cases that on the basis of the constitutional right to equal, non-discriminatory treatment by law, whenever an administrative measure (eg, a hydropower project) has the potential directly to affect or impact indigenous peoples, a specific consultation process that is different from the SEIA public participation process and that complies with Convention 169 should be implemented.¹⁴⁹ In these cases, the Supreme Court has also ordered project proponents to undertake EIAs rather than less rigorous DIAs.

In another landmark case, in May 2012 Chile's Supreme Court annulled the Environmental Assessment Service's decision to approve a mining project's EIA in violation of several rights conferred to the Diaguita community by ILO Convention 169. These rights included the right to consultation, to participate in profits and to receive compensation for damage caused.¹⁵⁰ This case set an important precedent for other projects, including hydropower developments that have the potential to affect lands traditionally occupied by indigenous peoples. Still, participation in benefits and compensation for damages have not yet been applied in Chile, at least insofar as hydro projects that affect the Mapuche people are concerned.

UNDRIP AND FPIC

The UN Declaration on the Rights of Indigenous Peoples (UNDRIP), which Chile approved with its vote at the UN General Assembly in 2007, is important in the context of development projects that affect indigenous peoples. UNDRIP acknowledges indigenous peoples as collective rights-holders endowed with the right to self-determination. It holds that by virtue of this right, they freely determine their economic development (Article 3), have autonomy in matters relating to their own internal and local affairs (Article 4), have the right to determine their development priorities (Article 23) and have the right to FPIC regarding decisions affecting their territories and livelihoods. According to UNDRIP, state decisions that require the FPIC of indigenous peoples include: decisions related to their removal or relocation from their lands and territories

149 *Faumelisa Manquepillán and others v COREMA XIV Región Rol 6062-2010* (Supreme Court of Chile); *Asociación Indígena Consejo De Pueblos Atacameños v Comisión Regional Del Medio Ambiente Region Antofagasta Rol 258-2011* (Supreme Court of Chile); *Comunidad Indígena Antu Lafquen de Huentetique v Comisión Regional Del Medio Ambiente de Los Lagos Rol 10.090-2011* (Supreme Court of Chile).

150 *Comunidad Agrícola Huasco Altinos v Comisión Regional del Medio Ambiente de Atacama Rol 2211-2012* (Supreme Court of Chile). This judgment led Goldcorp, the proponent of this US\$2.5bn project, called El Morro, to suspend its plans.

(Article 10) and the storage or disposal of hazardous materials in their lands or territories (Article 29.2). State actions that require consultation in order to obtain FPIC include: the adoption of legislative and administrative measures that may affect them (Article 19) and the ‘approval of any project affecting their lands or territories and other resources, particularly in connection with the development, utilization or exploitation of mineral, water or other resources’ (Article 32.2). Although many jurists consider UNDRIP to be soft law of a non-binding nature, it has been cited by Chilean courts in cases concerning indigenous peoples, including in decisions about development projects that affect indigenous lands and territories.¹⁵¹ Consequently, in the future it is likely to be considered as an applicable standard for hydropower and other developments in Chile.

The FPIC standard recognised by UNDRIP is particularly important. In recent years, a growing consensus about this standard has emerged among international human rights institutions, funding agencies and the private sector. These parties now widely agree that FPIC should be applied to state decisions that directly affect indigenous peoples, particularly when such decisions affect lands, territories and natural resources to which their lives and cultures are closely related. This consensus is reflected in, and reinforced by, the International Finance Corporation’s modification in 2012 of its Performance Standards on Social and Environmental Sustainability. Under the updated standards, IFC clients are required to obtain FPIC during several stages in the development of certain categories of projects, including: projects that impact land or natural resources under traditional ownership or customary use; projects that may require the relocation of communities; and projects that have significant impacts for the critical cultural heritage of indigenous people.¹⁵² The updated IFC standards, in turn, are likely significantly to increase the use of FPIC in these contexts, not just in connection with IFC funded projects but also because the IFC standards form the basis for policies of the 79 Equator Principle financial institutions, which together provide funding for a major portion of projects in emerging markets.¹⁵³

151 *Francisca Linconao v Forestal Palermo* Rol 7287/2009 (Supreme Court of Chile); *Fauvelisa Manquepillán y otros v COREMA XIV Región* Rol 6062-2010 (Court of Appeals of Valdivia).

152 International Finance Corporation, *Update of IFC’s Policy and Performance Standards on Environmental and Social Sustainability, and Access to Information Policy 8* (IFC 2011); *IFC Performance Standards on Environmental and Social Sustainability* (IFC 2012), standard 7.

153 ‘The Equator Principles (EPs) is a risk management framework, adopted by financial institutions, for determining, assessing and managing environmental and social risk in projects... Currently there are 79 Equator Principles Financial Institutions (EPFIs) in 35 countries... covering over 70 percent of international Project Finance debt in emerging markets.’ (‘About the Equator Principles’ (Equator Principles) www.equator-principles.com/index.php/about-ep accessed 6 February 2014.)

Other international organisations and actors have also endorsed FPIC in recent years. In 2013, the UN Working Group on the Issue of Human Rights and Transnational Corporations and Other Business Enterprises (WG) did so in a report to the UN General Assembly. This report established the obligation of states to obtain FPIC as part of their duty to protect human rights.¹⁵⁴ The WG also proposed FPIC as a central component of corporate responsibility to respect indigenous peoples' rights, framing it as a human rights obligation as well as a way to address the legacy of past wrongs inflicted on indigenous communities and to engage in dialogue with affected peoples.¹⁵⁵ The WG affirmed that corporations should attempt to obtain indigenous peoples' FPIC, even in the absence of a state-led FPIC process.¹⁵⁶

Equally relevant, the UN Special Rapporteur on the rights of indigenous peoples, James Anaya, has proposed as a general rule that extractive projects proposed by third parties (including states and private businesses) within indigenous territories should not take place without FPIC. According to Anaya, such territories include lands that have been titled or reserved to indigenous peoples, lands traditionally owned or possessed under customary tenure, areas of cultural or religious significance and areas in which indigenous peoples have traditionally had access to resources that are important to their

154 The WG affirms: 'Free, prior and informed consent (FPIC) is a fundamental element of indigenous peoples' rights, on which the ability to exercise and enjoy a number of other rights rest. States have an obligation to consult and cooperate in good faith in order to obtain FPIC before the adoption of legislation or administrative policies that affect indigenous peoples, and the undertaking of projects that affect indigenous peoples' rights to land, adheres to FPIC territory and resources, including mining and other utilization or exploitation of resources.' The WG also states that in certain circumstances, including the relocation of indigenous peoples from their lands, 'there is an obligation to obtain consent of the indigenous peoples concerned, beyond the general obligation to have consent as the objective of consultation' (UNCHR Working Group on the Issue of Human Rights and Transnational Corporations and Other Business Enterprises, 'Human Rights and Transnational Corporations and other Business Enterprises' (Advanced Unedited Version) (2013) UN Doc A/68/150, para 9).

155 The WG affirms: 'Going forward, and in line with FPIC, good faith consultation and participation is crucial particularly in respect of business decisions that will have a substantial impact on indigenous peoples' rights, including large "community footprint" projects such as mining, agri-business and infrastructure' (*ibid* para 21).

156 The WG states: 'In the absence of an adequate State-led FPIC process, a business enterprise needs to consider carefully whether it can proceed with the project without the risk of causing or contributing to adverse impacts on the rights of indigenous peoples: the failure to inform, engage and consult with indigenous peoples, both men and women, not only undermines the ability of a business enterprise to respect rights (as it may not be aware of its potential or actual impacts), but it also fosters mistrust between communities and business enterprises and can lead to disruptions of operations' (*ibid*).

physical well-being or cultural practices.¹⁵⁷ Anaya has also identified a set of conditions for obtaining and sustaining indigenous consent, including the establishment of state regulatory regimes that adequately protect indigenous peoples' land and resource rights; regulation of companies' extraterritorial activities; due diligence by extractive companies in respecting indigenous rights; fair and adequate consultation and negotiation procedures; and equitable agreements and partnerships, including impact mitigation and benefit sharing.¹⁵⁸ Although hydropower projects are not typically considered extractive activities, the impacts they often have on indigenous peoples and their territories make the conditions laid out by Anaya relevant.

Even the private sector is increasingly recognising the importance of FPIC. For example, in 2013 the International Council on Mining and Metals (ICMM), which represents the largest private investors in mining worldwide, issued a policy on indigenous peoples. In this statement, the ICMM expressed its commitment to work to obtain the consent of indigenous peoples for new projects (and changes to existing projects) located on lands that are traditionally owned or under customary use by indigenous peoples and that are likely to have significant adverse impacts on them. The ICMM articulates its view of FPIC as a process based on good faith negotiation through which indigenous peoples can give or withhold their consent. It adds that such processes should strive to be consistent with indigenous peoples' traditional decision-making processes while respecting internationally recognised human rights.¹⁵⁹

In sum, there is a growing consensus that indigenous peoples have the right to decide whether to consent to major development projects that are likely to affect them. When hydropower projects have serious implications for indigenous communities, as is often the case for Chile's Mapuche people, the internationally established FPIC standard cannot be ignored.

JURISPRUDENCE OF THE INTER-AMERICAN HUMAN RIGHTS SYSTEM

In recent years, jurisprudence has emerged from organs of the Inter-American Human Rights System, particularly the Inter-American Court of Human Rights (IACHR), concerning indigenous peoples' rights to lands and

157 United Nations Human Rights Council, 'Report of the Special Rapporteur on the rights of indigenous peoples, James Anaya – Extractive industries and indigenous peoples' (1 July 2013) United Nations General Assembly A/HRC/24/41.

158 *Ibid.*

159 International Council on Mining and Metals, 'Indigenous Peoples and Mining Position Statement' (ICMM 2013) www.icmm.com/publications/icmm-position-statement-on-indigenous-peoples-and-mining accessed 8 November 2013.

resources.¹⁶⁰ In its judgment in the case of *Awás Tigní v Nicaragua* (2001), the IACHR recognised the communal property rights of indigenous peoples over lands that were ancestrally owned and/or used by them, on the basis of customary law.¹⁶¹ In more recent decisions (*Yakye Axa v Paraguay* (2005), *Sawoyamaka v Paraguay* (2006) and *Saramaka People v Suriname* (2007)), the Court affirmed that possession is not a requisite condition for the existence of indigenous property rights, and that indigenous peoples who have been deprived of possession of territory they traditionally occupied preserve their property rights and have the right to restitution of their lands. In the case of *Yakye Axa v Paraguay* (2005), the Court held that the community's right to property extends over their traditional territories as well as the natural resources existing within them.

The case of the *Saramaka People v Surinam* (2007) is particularly relevant for hydropower projects in Chile. In its decision, the IACHR held that with regard to large-scale investment projects that could have a major impact on the territory of indigenous peoples, 'the State has a duty, not only to consult with the Saramakas, but also to obtain their free, prior, and informed consent, according to their customs and traditions'.¹⁶² The IACHR also acknowledged the right of indigenous peoples to reparation for impacts on the natural resources within their ancestral lands. The Court identified participation in project benefits as a specific form of fair compensation, stemming from the limitation or deprivation of the right to indigenous communal property.¹⁶³ The Court reaffirmed the obligation of states to protect indigenous peoples' right to free, prior and informed consultation in accordance with international standards in the *Sarayaku v Ecuador* decision

160 The IACHR has interpreted existing norms of the Inter-American System (the American Declaration on the Rights and Duties of Man and the American Convention on Human Rights) in light of ILO Convention 169, which it considers to be part of the *corpus juris* of international law that is relevant in examining complaints concerning indigenous territories.

161 In its ruling in the *Awás Tigní v Nicaragua* case (2001), the Court explained that 'as a result of customary practices, possession of the land should suffice for indigenous communities lacking real title to property of the land to obtain official recognition of that property, and for consequent registration.' IACHR, *Case of the Mayagna (Sumo) Awás Tigní Community v Nicaragua. Merits, Reparations and Costs*, judgment of 31 January 2001. Series C No 79, para 151.

162 *Case of the Saramaka People v Suriname. Preliminary Objections, Merits, Reparations and Costs*, judgment, Inter-American Court of Human Rights Series C No 172 (28 November 2007), para 134.

163 The Court affirmed: 'in the present context, the right to obtain "just compensation" pursuant to Article 21(2) of the Convention translates into a right of the members of the Saramaka people to reasonably share in the benefits made as a result of a restriction or deprivation of their right to the use and enjoyment of their traditional lands and of those natural resources necessary for their survival.' *Ibid* para 139.

(2012). It highlighted that the right to consultation is closely related to indigenous rights to communal property and cultural identity, and to life and physical integrity. It also stated that environmental impact assessment should be undertaken by an independent entity with the participation of indigenous peoples.

Indigenous peoples have faced difficulty in implementing these IACHR rulings owing to the lack of binding mechanisms for their enforcement. Nevertheless, this court's jurisprudence has had an impact on the domestic affairs of states that have accepted its jurisdiction (including Chile). In particular, the court's decisions have become precedents that these states take into consideration when creating policies for indigenous peoples. They have also influenced decisions of domestic courts in cases concerning indigenous peoples. Consequently, the Chilean State cannot ignore the IACHR's jurisprudence in cases concerning projects that severely affect indigenous peoples' lands and resources, including hydropower projects in Mapuche territory.

Chile in the context of the Americas

Chile ranks very poorly in terms of its legal frameworks and policies concerning indigenous peoples when compared to other states in the region, particularly when it comes to protecting indigenous rights against investment projects like hydro dams.

For one thing, most states in Latin America have modified their constitutions and laws to give increased recognition to indigenous peoples' rights to lands and natural resources,¹⁶⁴ and to indigenous forms of autonomy or self-government within their territories.¹⁶⁵ By contrast, Chile's Constitution lacks any kind of recognition of indigenous peoples. The recent constitutions of Ecuador¹⁶⁶ and Bolivia¹⁶⁷ are good examples. Both constitutions declare the states to be pluri-national and intercultural. They acknowledge the right of indigenous peoples to ownership and entitlement of ancestral lands and territories (Bolivia, Article 2; Ecuador, Article 57), as well as their rights to administration, usufruct and conservation of natural renewable resources located on their lands (Bolivia, Article 394; Ecuador, Article 57). Both constitutions also acknowledge indigenous rights to consultation regarding plans to exploit non-renewable natural resources located in their lands and

164 Brazil (1988), Colombia (1991), México (1992 y 2001), Paraguay (1992), Peru (1993), Argentina (1994), Bolivia (1994), Ecuador (1994 and 1998) and Venezuela (1999).

165 Nicaragua (1986), Colombia (1991) and México (2001).

166 Constitución de la República del Ecuador 2008.

167 Constitución Política del Estado de Bolivia 2009.

territories, and to participate in the benefits of the exploitation of such resources (Bolivia, Article 352; Ecuador, Article 57). Bolivia's constitution also establishes 'rural indigenous autonomy', which includes the rights to self-government and self-determination for rural indigenous nations and native peoples who share territory, culture, history, language, and political, social and economic organisation (Article 289).

Peru is one of the few states whose Congress has enacted legislation regarding consultation with indigenous peoples (Law No 6-2011 of 2011). Under this law, the goal of consultation is for the state to reach an agreement with, or obtain consent from, indigenous peoples with regard to administrative and legislative measures that affect them directly. The law stipulates that such agreement should be reached through an 'intercultural dialogue' that ensures these peoples' inclusion in the state's decision-making processes in a manner that respects their collective rights (Article 3). The law also identifies principles that govern consultation, including multiculturalism, goodwill, flexibility, reasonable time, no coercion and timely information (Article 4). Agreements reached through consultation are binding, and are enforceable through administrative and judicial actions. If no agreement is reached, then the state agencies' decision should ensure that the collective rights of indigenous peoples are respected (Article 15). This legislation was approved unanimously, and has been praised by international analysts, including UN Special Rapporteur, James Anaya, for its consistency with the provisions of ILO Convention 169.¹⁶⁸ In April 2012, however, it was regulated through a bylaw (Supreme Decree 001-2012 of the Ministry of Culture) that weakened some of its provisions. In particular, this bylaw stated that consultation outcomes are not binding unless the parties reach agreement, and it allowed consultation processes to take place after a concession was granted by the state. These measures have generated frustration among Peru's indigenous peoples.¹⁶⁹

Colombia is another interesting case. The country has no overall legislation concerning the state's duty to consult with indigenous peoples. Nevertheless, the Constitutional Court of Colombia has developed jurisprudence that takes into account Convention 169 and UNDRIP, providing protection for indigenous lands and resources that are threatened by developments like hydropower dams. In its jurisprudence on 18 legal actions considered

168 'Perú/Pueblos indígenas: ley de consulta previa es un logro clave para el país y la región, dice experto de la ONU' (UNOHCHR South America Regional Office, 25 August 2011) <http://acnudh.org/2011/08/peru-pueblos-indigenas-ley-de-consulta-previa-es-un-logro-clave-para-el-pais-y-la-region-dice-experto-de-la-onu> accessed 8 November 2013.

169 International Work Group for Indigenous Affairs (IWGIA), *The Indigenous World 2013* (IWGIA, Copenhagen 2013).

between 1993 and 2006,¹⁷⁰ the Court ordered the suspension of various development projects due to a lack of adequate previous consultation with the affected communities.¹⁷¹ In cases concerning large developments with major impacts on indigenous territories, the Court ruled that proponents needed to obtain FPIC in addition to carrying out consultation processes.¹⁷² In 2011, this jurisprudence was reaffirmed when the court halted three proposed investment projects that directly and negatively affected the Embera Katío people while consultation aimed at obtaining the FPIC of the community took place.¹⁷³

Finally, Canada must be mentioned. Its Constitution Act of 1982 recognises the aboriginal and treaty rights of the indigenous peoples of Canada (section 35). In recent years, the jurisprudence of Canada's Supreme Court has given growing recognition to aboriginal rights and titles to lands traditionally occupied by these peoples. In 2007, in a landmark decision in the case of *Delgamuukw v British Columbia*, the Court acknowledged that when an aboriginal people can establish that during a time of sovereignty it exclusively occupied a territory to which a substantial connection has been maintained, it has the communal right to exclusive use and occupation of those lands. The Court also established the Crown's duty to consult with the Aboriginal peoples in good faith and with the intention of substantially addressing their concerns, and to provide accommodation when their rights are infringed upon. In the case of *Taku River Tlingit v British Columbia* (2004), the Supreme Court stated that 'accommodation' by the Crown includes implementing, or requiring implementation by others, of measures to avoid, minimise or mitigate the impact, or, as a last resort, provide compensation.

Canada has also set standards for large-scale developments on indigenous lands through so-called 'modern treaties' entered into by different aboriginal peoples, Canada and provinces. The James Bay and Northern Québec Agreement (JBNQA) of 1975 and the Northeastern Quebec Agreement (NEQA) of 1978 are considered to be the first of these modern treaties. These agreements aimed to solve conflicts around the construction of the James Bay Phase I project, a large hydro development located in northern Quebec that was proposed by Hydro Québec, a Crown Corporation. Under these agreements, the Crees and Inuit obtained recognition of their rights

170 James Anaya, *La situación de los pueblos indígenas en Colombia: Seguimiento a las recomendaciones hechas por el Relator Especial anterior* (8 January 2010) UN Doc A/HRC/15/34.

171 Due Process of Law Foundation, *El derecho a la consulta previa, libre e informada de los pueblos indígenas. La situación de Bolivia, Colombia, Ecuador y Perú* (Due Process of Law Foundation 2011).

172 Constitutional Court of Colombia Decision T-769/09 (2009).

173 Constitutional Court of Colombia Decision T-129 (2011).

to resources and wildlife harvesting, as well as cash compensation and recognition of their local and regional forms of self-government.¹⁷⁴ In exchange, they accepted Quebec's right to proceed with the proposed hydro project in their traditional territory. After opposing a second phase of hydro projects proposed by HydroQuebec (which were ultimately not built), in 2002 the Cree of Quebec signed the New Agreement with Quebec under which they gave consent, not without internal debate, for hydroelectric development in the Eastmain and Rupert rivers by Hydro Québec. This agreement provided cash compensation of CAD\$3.5bn for the Cree over a 50-year period. It also provided the Cree people with autonomy over the administration of Cree communities, and required their participation in assessments of future development projects. Finally, the agreement set up a new forestry regime aimed at joint management of parks and protected areas, as well as shared revenues from hydro, mining and forestry activities.¹⁷⁵

Key issues

Chile's legal frameworks do not adequately govern hydropower development on Mapuche lands, and they fall far short of international and regional standards. Appropriate and transparent procedures are not in place for consulting with indigenous peoples that could be affected by hydro projects. The consultations that do exist (within the SEIA framework) do not meet the standards established by ILO Convention 169. Secondly, the obtainment of FPIC is not standard practice. There is no systematic opportunity for affected indigenous communities to influence whether or not a project will be developed on their lands. Thirdly, project developers and government

174 The Cree and Inuit obtained recognition of about 1.161 million square kilometres of land, including: Category I lands (14,000 square kilometres) to be administered by local councils and regional boards for the exclusive use of the Cree and Inuit; Category II lands (150,000 square kilometres) under provincial jurisdiction and administration, where the Cree and Inuit have no property rights but can hunt, fish and use traps; and Category III lands (1 million square kilometres) where the Cree and Inuit have exclusive rights to trapping and priority for equipment, but where public access is allowed. They also obtained monetary compensation of CAD\$225m. The Inuit gained control of municipal corporations responsible for local administration and government of public services such as police, transport and communications. Locally, the village corporations became managers of public safety, health, regulatory plans, municipal roads, recreation and cultural materials. Under the JBNQA, two advisory committees for environmental issues were created that included representatives appointed by the federal and provincial governments and indigenous peoples. José Aylwin, 'Indigenous peoples' rights in Chile and Canada: A comparative study' (Master's Thesis, University of British Columbia 1999).

175 Miriam Atkinson and Monica E Mulrennan, 'Local Protest and Resistance to the Rupert Diversion Project, Northern Quebec' (2009) 62(4) *Arctic* 468.

authorities have not created mechanisms that allow the Mapuche people to participate in the benefits of hydro projects that utilise their resources, or to receive adequate compensation for damages. These shortcomings amount to a framework that does not ensure the protection of the Mapuche people's rights to influence decisions about the many hydropower projects that affect them, despite the existence of a range of international norms and precedents that uphold these rights and are applicable in Chile.

Suggested policies and principles

Chile should adjust its energy policy-making, impact assessment and indigenous consultation frameworks to facilitate more balanced decision-making about whether and how to build hydropower projects. In this final section we propose policy reforms, as well as principles that ought to be applied to hydropower development in Chile regardless of policies that are put in place.

Policy options

STRONGER INDICATIVE PLANNING: A NATIONAL ENERGY POLICY DOCUMENT

Chile should create a new national energy policy that goes beyond today's purely market-driven approach.¹⁷⁶ While most decisions are likely to remain in the hands of private investors, the national government could take a somewhat stronger role by adopting a more robust indicative planning approach.¹⁷⁷ One way this can be accomplished is by providing definitive forecasts at a national scale, taking into account interdependence among a wide range of economic activities and government policies. Such information would guide private sector investment without mandating it or requiring massive public spending.

Chile's national government – perhaps through the National Energy Commission, which already has some indicative planning responsibilities, or the Ministry of Energy – could take a greater role in spelling out short-term and long-term energy priorities. It could also require, or perform on its own, more complete analyses of the full range of costs and benefits associated with

176 In May 2014, the Bachelet administration announced its intent to carry out a broad public participation process culminating in a new national energy policy. See Ministerio de Energía 2014, n 69 above.

177 Indicative planning can be understood as a 'soft' coordinating strategy that allows the state to guide policy without controlling implementation. Ignacio J Pérez-Arriaga and Pedro Linares, 'Markets vs. Regulation: A Role for Indicative Energy Planning' (2008) *Energy Journal* Special Issue 149.

each type of energy generation. An indicative approach to energy policy design and implementation can be entirely transparent, incorporating the input of key stakeholders from the private sector, a range of government agencies, regional and local authorities, and civil society. Published forecasts and projected costs would need to be approved, at least by the executive branch, and possibly by Congress as well.

Specifically, a policy document of this kind could spell out objectives for different time horizons (three-year, five-year, ten-year, etc), not just in terms of energy targets, but also in terms of interconnected natural resource markets, management requirements, and acceptable impacts, for example on water, forestry, agriculture, aquaculture, mining and tourism. It could specify projected energy demand in various ways, including by sector and region, indicating high, medium and low ranges given the uncertainties that abound. Likewise, supply estimates could be specified by different generating sources (including hydropower, wind, solar, etc) for each time horizon considered. These need not be hard targets, but rather estimates or ranges. In other words, they could be offered as a way to help private sector developers make wise investment decisions in light of the government's best estimate of future market trends.

In addition, such an energy policy statement should make clear that the government is hoping to encourage different energy investments in different regions to fill the gap between projected supply and demand. These priorities ought to take account of regional and local concerns and priorities. They should also seek to diversify Chile's electricity matrix. If hydropower objectives for a region are spelled out as a way of meeting electricity shortfalls, these should be presented in terms of all possible energy sources (including efficiency improvements) that could be used to meet electricity demand. Comparative analyses of the costs and benefits of different types of generation would make it easier for the public to participate in discussions of energy policy choices.

A national energy policy of this kind would guide energy generation in a much more accountable way than recent national energy strategies have. It would also provide guidance for private investors.

IMPROVEMENTS TO THE SEIA

The SEIA can be improved. Environmental and social impacts of proposed projects should be assessed earlier, more thoroughly and with more public input. Specifically, the SEIA should require proponents to consider a range of alternatives – including different project sizes, sites, technologies and mitigation strategies, as well as the 'no build' option – before formulating a

particular proposal. The feasibility of each alternative, as well as its potential environmental and social impacts, should be considered.

Members of the public should be given more of a chance to participate throughout the assessment process. They should have a role in scoping and reviewing proposed evaluation studies, which would allow them to suggest alternatives that could then be studied and give them a chance to react to initial findings before decisions are made. This would require adding a comment period earlier in the assessment process (ie, a scoping requirement). It would also require support for stakeholders who want to participate in the impact assessment process but lack the capacity to do so. The government should make resources (eg, small grants or independent technical assistance teams) available to help groups that want to participate.

The government could encourage the use of professional ‘neutrals’ (ie, mediators) to help manage public participation so that the SEA is not always in the double role of regulator and facilitator. Professional neutrals could be chosen by a project proponent, ideally together with other stakeholders and with the approval of the SEA. These mediators would help to ensure that public conversations and meetings are effective, information is shared and understood by all sides, and commitments are carried forward. Neutrals could also help the stakeholders involved generate new ideas and solutions. The effectiveness of such personnel would hinge on perceptions of their impartiality.¹⁷⁸

Final EIAs/DIAs should be presented for public comment through various channels, including online, in newspapers (in summary form), in hard copy at public offices, and orally at public meetings. Public comments ought to be accepted both in writing and at public meetings. The SEA should not be the actor charged with responding to comments and concerns through the RCA, but rather the proponent should be required to do so, in writing and in public. The SEA should note inadequate responses, and no RCA should be issued until all responses are considered adequate.

Improving the EIA process along these lines could help generate ‘mutual gains’ solutions to land use problems. Projects that might be rejected outright by the current EIA process or challenged or delayed in court could instead move more quickly through the assessment process by working out new options that are acceptable to all stakeholders.¹⁷⁹

178 Lawrence Susskind and Francisco Ingouville, *Mejor que la Mayoría* (Granica 2011).

179 This has been the case elsewhere. For example, in 2013 a contentious solar project in the United States was approved after a project alternative was selected that included the purchase of additional land for endangered species in the area. ‘Secretary Salazar Approves Three Renewable Energy Projects in California and Nevada’ (United States Bureau of Land Management News Release 13 March 2013) www.blm.gov/wo/st/en/info/newsroom/2013/march/NR_03_13_2013.html accessed 8 November 2014.

INDIGENOUS CONSULTATION AND FPIC

Procedures for indigenous consultation around hydropower projects need to be brought into line with the requirements of ILO Convention 169. It would make sense to do this by producing a new set of regulations governing indigenous consultation on investment projects. Such regulations would need to be produced with adequate consultation with indigenous groups.

These new requirements should ensure that indigenous consultation is binding in the case of hydro (and other major infrastructure) projects that directly affect indigenous people and communities. Consultation should be implemented in good faith with representatives designated by indigenous peoples. It should begin early in the project development cycle, for example during feasibility studies, and should involve consideration of both whether and how projects should be built. Parties could be encouraged to use professional neutrals to manage such consultation processes. The outcomes of consultation processes should be legally enforceable.

The government should clearly spell out situations requiring free, prior and informed consent in accordance with UNDRIP and the IACHR, and the acquisition of FPIC should be compulsory in these cases. FPIC requirements could be linked to the improved public engagement and impact assessment procedures we are recommending. That is, FPIC consultations could be embedded within an overall collaborative process that involves inviting all appropriate stakeholders to the table, suggesting project alternatives worthy of further study, scoping the impact assessment studies required, and negotiating contingent agreements regarding compensation and ongoing joint review. If consultation and impact assessment result in a decision not to move forward with a project, that is a legitimate outcome.

The new rules should make clear that whenever a hydro project is accepted, mechanisms need to be put in place to ensure that affected indigenous peoples and communities share in the benefits and receive compensation for damages caused. The terms of these benefits and compensation and mitigation measures need to be agreed upon through consultation. Guidance should be made available regarding possible forms of benefits sharing, ranging from jobs and training to a guaranteed percentage of the profits generated throughout a project's life cycle. Likewise, mechanisms to identify, mitigate and compensate for adverse impacts to indigenous peoples should be jointly defined.

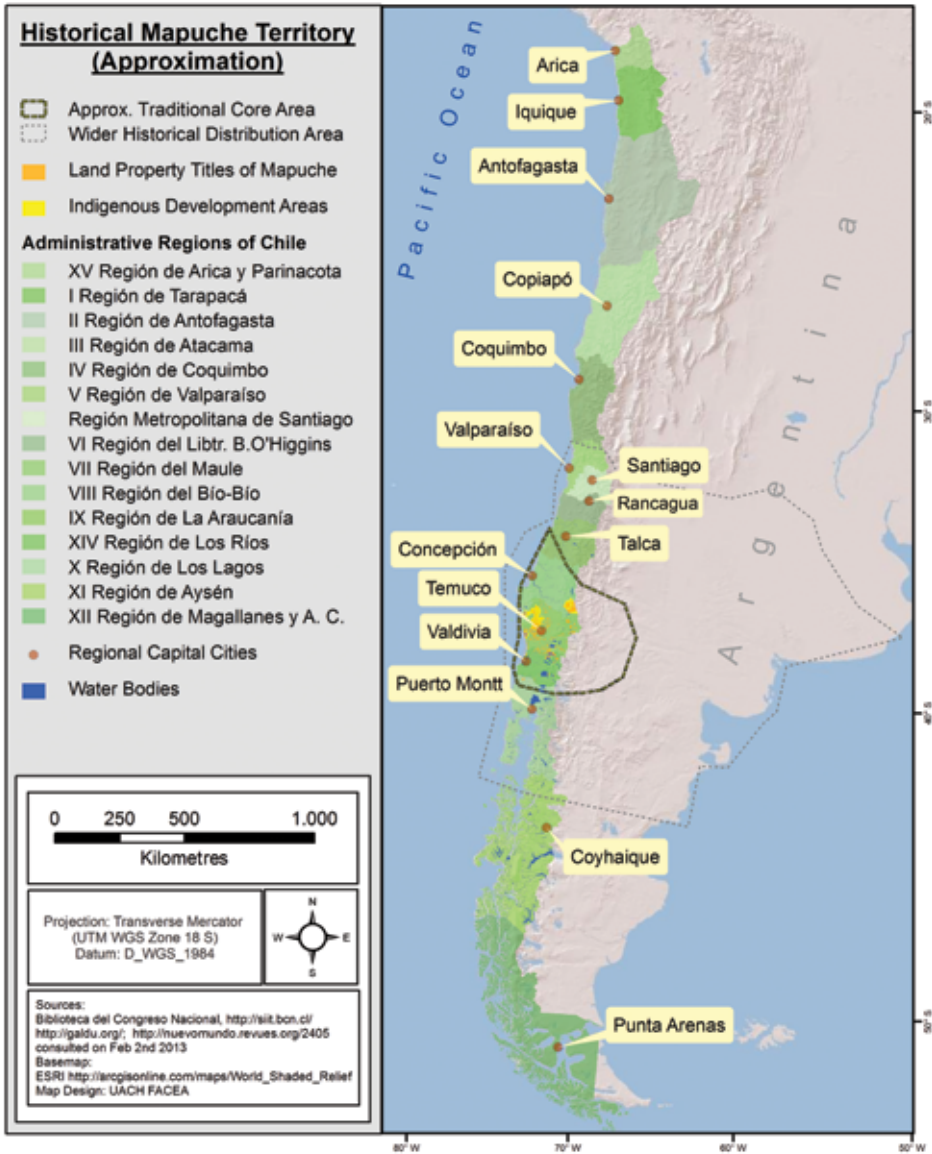
Principles that ought to be taken seriously moving forward

However hydropower moves forward in Chile, the following key principles should be taken seriously by project proponents and government authorities:

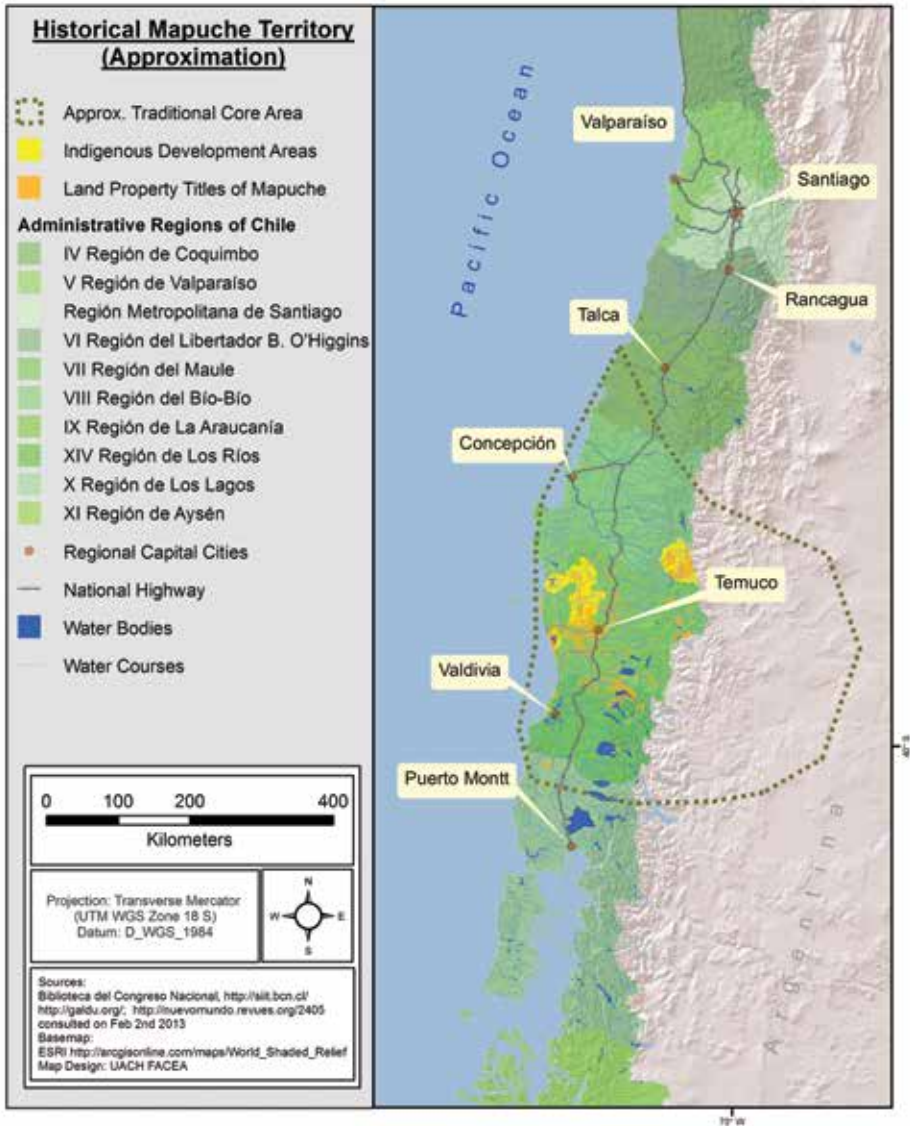
1. **Proponents and government agencies should have to justify major projects with reference to clearly spelled out short, intermediate and long-term objectives, strategies and policies.** These should take into account cross-sectoral interactions, including markets for different primary energy generation options and impacts on the sustainability of natural resources.
2. **When hydropower-related markets are not working properly, regulation and/or direct government involvement should be considered.** Government interventions, including regulations aimed at incentivising key investments in generation and transmission, should take into account a broad range of criteria and externalities from the standpoint of different actors and sectors.
3. **Individuals and groups affected by proposed projects ought to have meaningful opportunities to participate in informed discussions about whether – not just how – projects should be undertaken.** There should be adequate time and resources allotted for public participation, and civil society groups should have access to the technical assistance they need to participate in these discussions. Parties should consider using professional mediators to help manage these conversations.
4. **Indigenous peoples and communities whose territories are directly impacted by hydropower projects have legal rights to consultation and free, prior, and informed consent.** Transparent procedures should be put in place so that indigenous peoples' representative organisations are appropriately consulted.
5. **Whenever a project moves forward, affected individuals and communities ought to participate in the benefits generated and receive compensation for damages imposed.** This is especially important when affected indigenous communities provide their consent to a project. Benefits sharing, compensation and mitigation measures should be defined jointly through appropriate representative organisations and negotiations.

Annexes

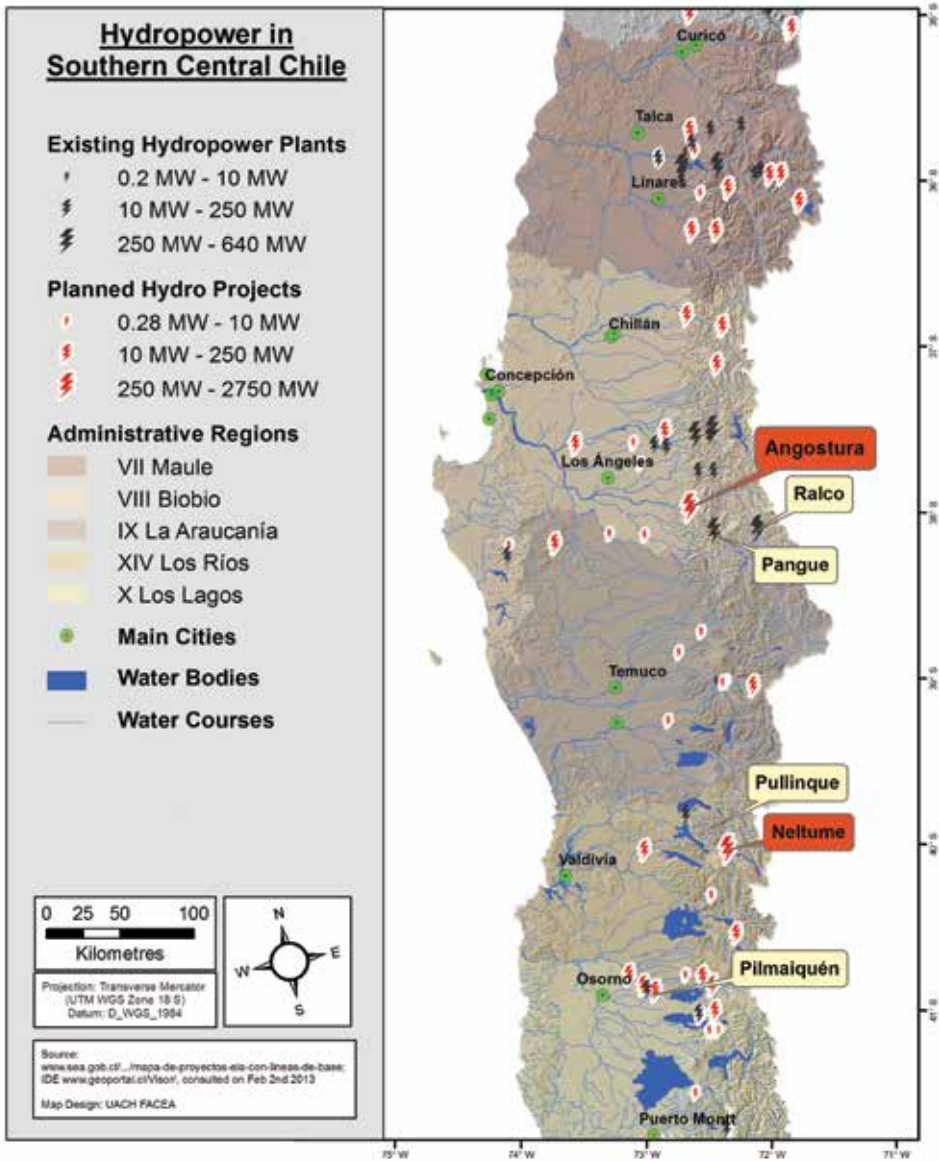
Annex 1: Approximated Historical Mapuche Territory (country-scale)



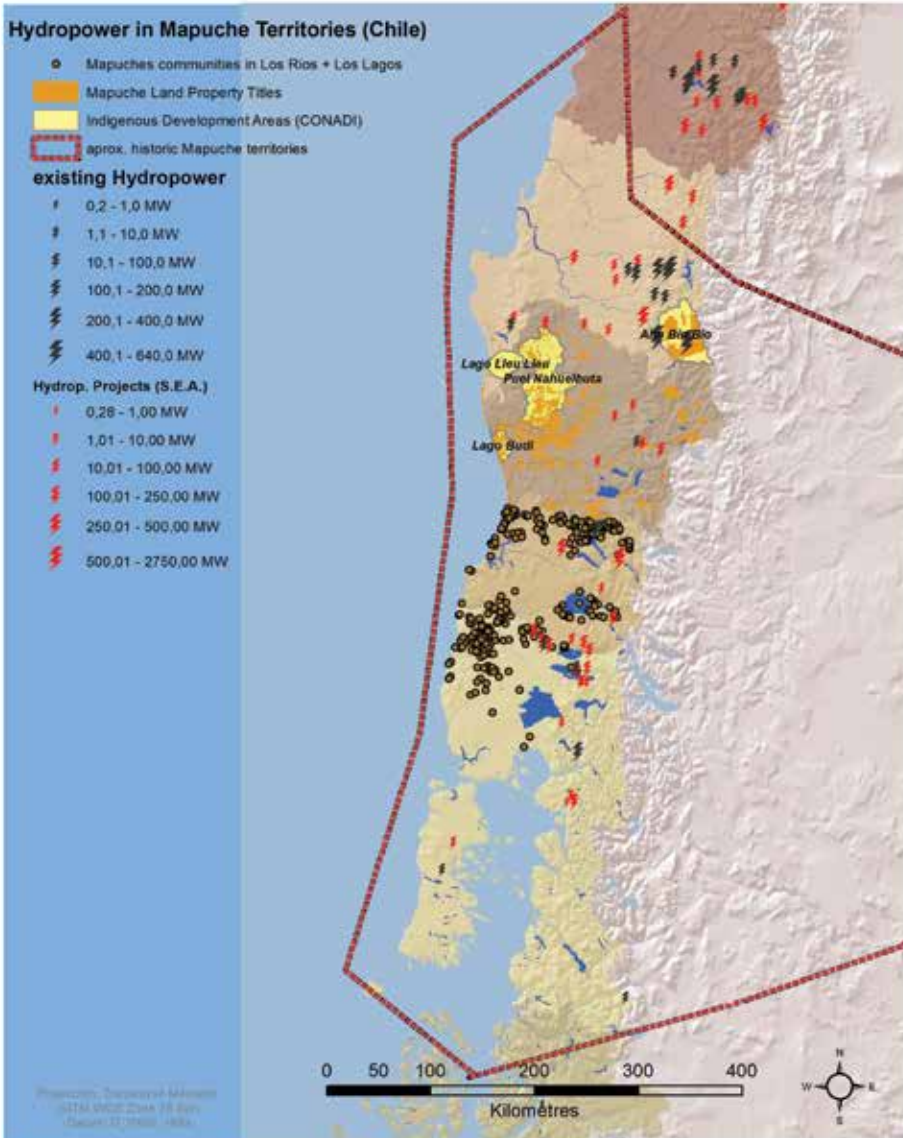
Annex 2: Approximated Historical Mapuche Territory (regional-scale)



Annex 3: Hydropower in Southern Central Chile (with select projects)



Annex 4: Hydropower in Mapuche Territories



Annex 5: Electricity Transmission Systems in Chile

