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Power driven

In Iceland, work has already begun on a colossal \$1bn dam which, when it opens in 2007, will cover a highland wilderness - and all to drive one US smelter. Environmentalists are furious, but the government appears determined to push through the project, whatever the cost. Susan De Muth investigates

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North of Vatnajokull, Europe's biggest glacier, lies Iceland's most fascinating and varied volcanic landscape. Ice and boiling geothermal infernos meet at the edges of the glacier, and then the largest remaining pristine wilderness in western Europe begins - a vast panorama of wild rivers, waterfalls, brooding mountains and mossy highlands thick with flowers.

A large part of this is due to disappear under 150m of water by 2006, when the Karahnjukar dam is completed. Work has already begun on the \$1bn mega-project designed to power just one aluminium smelter, to be built by US multinational Alcoa. Environmentalists in Iceland and abroad have looked on in disbelief as the project has proceeded, sidestepping one obstacle after another, driven by a government seemingly determined to push it through, whatever the cost to nature or the economy.

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The 190m high, 730m wide main dam, two smaller saddle dams and 53km of headrace tunnels will be paid for by Landsvirkjun (the national power company, owned jointly by the Icelandic government, the city of Reykjavik and the town of Akureyri). The main dam will create a huge reservoir, to be called Halslon, which will inundate a 57sq km swathe of the highlands to the south before running on to the glacier itself. The resulting hydroelectricity is contracted for sale for 50 years to Alcoa, which is closing two smelters in the US and relocating to Iceland as a cost-cutting measure.

In August 2001, Iceland's National Planning Agency (NPA) rejected the project on the grounds of "substantial, irreversible negative environmental impact" - of 120 hydropower projects submitted for approval, Karahnjukar is the only one it has opposed. Just four months later, that decision was overturned by minister for the environment Siv Fridleifsdottir, in a move that prompted a series of lawsuits and raised concern about the nature of democracy in Iceland. Earlier this year, lawyer Atli Gislasson and a group of 26 citizens brought separate cases before the Icelandic high court and European Free Trade Association surveillance authority, challenging the

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government's lack of transparency and Fridleifsdottir's decision; both cases are expected to be heard next month.

I joined Gudmundur Pall Olafsson, Iceland's leading environmental activist, at Karahnjukar to see for myself what will be lost. A charismatic man in his early 50s, Olafsson was accompanied by 15 friends for the same "valedictory pilgrimage" undertaken by several thousand Icelanders this summer. We gathered on high ground overlooking the construction site. Bulldozers crawled across the scarred sides of Karahnjukar mountain, their distant rumble interspersed with birdsong. We could see the famous Dimmugljufur canyon, Iceland's Grand Canyon, which will be partially destroyed by the dam. The southern part has already been demolished and the northern stretch, carved by the river through time, will become dry. The dynamiting of the canyon began in March, some months before the final finance was in place, and was broadcast on state television. "It was a propaganda tactic," says Olafsson. "The general elections were on May 10 and the government did not want Karahnjukar to be an issue. The message was, 'This is something you cannot stop'."

Heading south from the site, the first part of our walk took us past Saudarfoss, a breathtaking terraced waterfall, one of 60 that will be lost. Last month, a farmer discovered remains nearby of a farm where much of the action in Hrafnkel's Saga, one of the classics of Icelandic literature, took place; archaeologists heralded this as a very significant find. Crystal-clear waters tumbled into the grey silty torrent of Jokulsa a Dal, the glacial river that will power the main dam, and from there one of the largest continuously vegetated areas in the highlands begins.

It was difficult to walk on the deep, springy mattress of moss, grass and flowers, and the spot is so inaccessible that few have been lucky enough to do so. This is one of the main breeding grounds for the area's reindeer - according to Skuli Sveinsson, a tracker, a cull of one third of the population has already begun in anticipation of the drastic reduction in feeding grounds. Thousands of pink-footed geese graze these uplands, a protected nesting ground. It is also a favourite haunt of the snowy owl, ptarmigan and the majestic gyrfalcon. Blood-red rocky gorges, vivid as raw steak, give way to barren black sediment ledges. Moulded by glacial movement and sensitive to atmospheric changes, the formations are a record of 10,000 years of geological and climatic change. Unique in the world, they are of immense interest to scientists studying, among other things, global warming. Specialists fear there is not time to unlock even some of their secrets. Passing rapids of unimaginable violence, we find the imposing stone head, sculpted by nature, which has become a symbol of resistance to the dam project; its image was this summer's top-selling postcard.

The environmental impact of the project is by no means confined to the future shores of Halslon, nor to unpopulated areas. In summer, when the water is low, strong eastern winds will whip up dried silt at the edge of the reservoir, blowing dust storms over the highlands towards farms further east. The hydro-project will also divert Jokulsa a Dal at the main dam, hurtling the river through tunnels into the slow-moving Jokulsa i Fljotsdal, which feeds Iceland's longest lake, Lagarfljot. The calm,

silver surface of this tourist attraction will become muddy, turbulent and unnavigable.

In the Herardsfloi delta, home to a significant seal population, heavy silt deposits from Jokulsa a Dal currently prevent the sea from encroaching on the land. Once the silt is trapped by the new dam, fields will be flooded and two established farms - one an eco-tourism centre - almost certainly destroyed.

The most alarming development for conservationists, however, is the violation of an officially protected area. One third of Kringilsarrani at the foot of the glacier will be submerged. In a radio interview in August, Siv Fridleifsdottir said that, in her view, "protected" did not mean "for ever protected". Fridrik Sophusson, Landsvirkjun's managing director, supports her decision, and tells me the government "has the right to change such a human decision".

But many people fear that these statements herald hydropower projects in areas that would hitherto have been unassailable. An example is Dettifoss, the most powerful waterfall in Europe, officially protected and one of Iceland's great tourist attractions. Professor Gisli Mar Gislason, who was part of a government thinktank consulted on proposed power projects, says, "Landsvirkjun intends to divert Jokulsa a Fjollum, cutting off the water to Dettifoss for most of the year but turning it on for the tourist season."

Gislason believes the government's determination to start the project was strategic. "It was the most controversial hydropower plan on the table. The reasoning was that, if they could force Karahnjukar through, they could get away with anything. It's already happening: in September, the minister for industry overruled an environmental impact assessment and gave the go-ahead for a project on the Thjorsa river that will inundate part of a protected area - a project that had already been rejected by the local authority."

Iceland is small - the population numbers around 290,000, and just 63 MPs constitute its parliament. A handful of individuals and families, colloquially known as "the octopus", exerts disproportionate power and influence. Writer and social commentator Gudbergur Bergsson says, "Iceland is unique in being 80% middle class... the easiest class to control, because they have the most to lose."

There have been some grand gestures by individuals: this summer, poet and activist Elisabet Jokulsdottir grabbed the microphone during a domestic flight over Karahnjukar, giving passengers an impassioned lecture on the dam project. But there is a lack of cohesion and strategy when it comes to wider protest. A small grassroots movement has regular "speak-outs" and demonstrations in Reykjavik, drawing up to 1,000 people, but Icelanders are gentle and peace-loving (Iceland has no military). Its protesters would struggle to orchestrate the kind of action and concentrated opposition that halted construction of the Santa Isabel dam in Brazil.

While much of the developed world is busy dismantling dams, transplanting its heavy industry base to the developing world, the people who govern Iceland hold fast to their dreams of an industrialised nation. David Oddsson, the prime minister and leader of the Independence party,

has been in power for 12 years and is revered, feared and hated in equal measure. With Halldor Asgrimsson, leader of the Progressive party, he heads the ruling rightwing coalition. The opposition comprises a centre-left coalition with 20 seats, five Left-Greens and four Liberals.

Hydropower is officially the responsibility of the ministers for industry and environment, appointed in 1999, but many Icelanders doubt their ability to participate in informed debate on the relevant issues. Certainly their CVs are not reassuring: in charge at the ministry of industry and commerce is Valgerdur Sverrisdottir, whose only paper qualification seems to be an English as a foreign language certificate awarded in 1972. Siv Fridleifsdottir, minister for the environment, is a qualified physiotherapist. Neither minister cites any parliamentary or other experience relating to their portfolios. When I requested an interview with Fridleifsdottir, I was redirected to Sigurdur Arnalds, described as "the government's finest expert on the Karahnjukar project". Arnalds is Landsvirkjun's head of PR. (This is like being redirected to Alastair Campbell as the British government's expert on the war with Iraq.)

Fridrik Sophusson, a former minister of finance in Oddsson's cabinet and now Landsvirkjun's managing director, clearly shares the ruling elite's appetite for mega-projects. Now 60, he recalls the days when Iceland was impoverished and patronisingly known throughout Scandinavia as "little Iceland". Today, it is one of the most affluent nations in the world, having exploited its natural resources, mainly fish, and Sophusson reasons that hydropower is a logical step towards economic diversification. He dismisses conservationists as "romantic".

Iceland's neighbours are not impressed: lamenting its "democracy deficit", the Swedish Gothenburg Post recently described Iceland as "a pariah among Nordic nations" for its disastrous environmental policy, which it called "war against the land".

The government's utilitarian attitude would make more sense if the dam project was in any sense viable. Its rationale is that the dam and smelter will revitalise the local economy by creating jobs in the eastern fjords and reversing the current depopulation trend. But the area has little unemployment, and few Icelandic youngsters would be tempted by the harsh conditions of the highland construction site or one of Alcoa's 400 or so jobs. The two existing smelters in Iceland have been obliged to import cheap foreign labour from eastern Europe. The environmental damage caused by both smelter and dam looks set to prompt a further exodus.

Aluminium smelters emit enormous quantities of greenhouse gases. In 2001, super-clean Iceland was able to negotiate a 10% increase in permitted emissions under the Kyoto protocol - the biggest increase in the world. In effect, Alcoa is buying Iceland's licence to pollute, as well as cheap electricity. The ministry of environment also gave Alcoa a licence to emit 12kg of sulphur dioxide (SO₂) per tonne of aluminium produced - 12 times the level the World Bank expects from modern smelters. SO₂; and fluoride, the most dangerous pollutants in terms of public health and land damage, will be pumped directly into the air via giant chimneys.

Local opposition is limited. Gudmundur Beck, 53, is the lone voice of resistance in Reydarfjordur, the eastern fjord where the Alcoa smelter is to be built. He has lived in the fjord all his life, but his farm will be decommissioned once the smelter opens in 2007. He believes that local people have been won over by a concentrated spin campaign: "Landsvirkjun has spent millions of krona on PR in this area, particularly on the radio." Thuridur Haraldsdottir, a local sailor's wife, is so enthusiastic that she has had her car number plate re-registered to read Alcoa.

Even Landsvirkjun concedes that the Karahnjukar project will not be sustainable, and that the heavy silt content of Jokulsa a Dal will eventually fill the reservoir. Expert opinion is divided only on how long the dam will remain operational. Estimates range from 50-400 years. But Landsvirkjun does not generally welcome adverse scientific findings. Many geologists fear catastrophic flooding may result from regular glacial surges and eruptions in Karahnjukar's catchment area. They also question the consequences of building a colossal dam on a substructure weakened by geothermal fissures. These concerns were brought before parliament by scientists earlier this year, but the Left-Green MP, Kolbrun Halldorsdottir, reports, "The minister for industry advised the house that these scientists were politically motivated and not to be listened to."

Thorsteinn Siglaugsson, a risk specialist, prepared a recent independent economic report on Karahnjukar for the Icelandic Nature Conservation Agency. "Landsvirkjun's figures do not comprise adequate cost and risk analysis," he says, "nor realistic contingencies for overruns." Had the state not guaranteed the loans for the project, Siglaugsson adds, it would never have attracted private finance. "Karahnjukar will never make a profit, and the Icelandic taxpayer may well end up subsidising Alcoa."

In July, Barclays arranged the final \$400m loan required by Landsvirkjun, apparently in breach of the "Equator Principles" it had signed up to only one month earlier, demanding "sound environmental management practices as a financing prerequisite". Barclays has denied it is in breach of this voluntary code of practice, pointing to a "second opinion" it commissioned from Texan environmental consultancy Stone and Webster. (Stone and Webster's report, which was leaked, concluded, "Objection will continue from some NGOs with the potential for some short-term negative publicity but this is likely to diminish as the project moves forward, and can be controlled by ongoing public relations activities.")

In 2001, the EU anti-corruption group Greco found that "the close links between the government and the business community [in Iceland] could generate opportunities for corruption", and it is the closeness of these links that the government has had to watch. This summer the police launched an investigation into alleged price-fixing by a cartel of three oil companies, which is proving particularly embarrassing - the director general of Shell Iceland, one of the companies under investigation, is married to the government's current Speaker (and a former minister for justice). The Independence party has necessarily close links with the domestic construction industry, which has benefited from most of the Karahnjukar subcontracts. But the biggest slice of the cake - \$500m - has gone to Italian conglomerate Impregilo, which was awarded the

construction contract in March and is itself facing allegations of corruption in Africa.

Impregilo is currently embroiled in trials in Lesotho, where South African consultant Jacobus du Plooy has pleaded guilty to paying bribes of £225,000 to the Lesotho Highlands Water Project. A decision as to whether to prosecute Impregilo alone, or together with the two British firms also accused of corruption, has yet to be taken; all three deny that they knowingly paid bribes. Impregilo was one of the three principal firms contracted to the notorious Yacyreta dam project in Argentina, which overran its projected costs by billions and was subject to financial scandals throughout its construction. It was also part of the consortium planning to build the Ilusu dam in Turkey which, had it gone ahead, would have made 30,000 Kurds homeless and drowned the world historic site of Hasankeyf.

When I asked Sophusson if he was aware of the corruption charges faced by Impregilo, he referred to an established culture of corruption in Africa and Asia as a "cost". While he is not in a position to comment on Impregilo's business practice, he was candid about Iceland's past experiences. "Twenty years ago we had to bribe officials [in order to export] fish to Nigeria," he said. "It was even stated on bank statements. It's a cost we have to pay, and it's much better to be without paying." He was, however, quick to emphasise that "we are not taking money from Impregilo" - a question I had not asked.

Impregilo was the only company to bid below the consultant's estimate for the job, and substantially below its competitors in the final round. Asked about the procedures involved, Sophusson volunteered the information that, in the end, Impregilo's was "the only serious bid remaining... and we were a little nervous about that". He may have good reason to be nervous, too: Impregilo employs some of the best lawyers in Europe and has negotiated 1,100 exemptions in its contract - all of which are believed to leave Landsvirkjun liable.

In Megaprojects And Risk, published earlier this year, the Danish economist Bent Flyvbjerg examined hundreds of multibillion-dollar mega-projects across five continents. Promoters of mega-projects, Flyvberg and his co-authors write, characteristically "misinform parliaments, the public and the media in order to get projects approved and built", with "the formula for approval an unhealthy cocktail of underestimated costs, overestimated revenues, undervalued environmental impacts and overvalued economic development effects".

It is too early to say whether Karahnjukar qualifies as such a project but, according to Flyvbjerg, the financial ramifications of such projects can "hinder the economic viability of the country as a whole". This is something that deeply concerns Thorsteinn Siglaugsson.

"State-sponsored, unprofitable industries harm the economy in general," he says. "That is why the USSR went bankrupt." Siglaugsson fears that a boom during the construction period, with attendant high interest rates, will be followed by a recession. He knows of several Icelandic manufacturers who are already planning to relocate abroad.

Polls show the nation to be more or less divided on the

subject of Karahnjúkar. But how well-informed are Icelanders? Many journalists speak of a media that is controlled both directly and indirectly by the state. In August, the BBC World Service lost its slot on Icelandic airwaves just as minke whale-hunting was resumed after a 14-year ban. Veteran broadcast journalist Omar Ragnarsson told me how he ran into trouble when he reported "both sides" of the Karahnjúkar debate on national television - "There were calls for me to be fired." In order to make a "rational" film about Karahnjúkar, he has sold his flat and jeep to finance it independently.

Dr Ragnhildur Sigurdarsdóttir, a highly regarded environmental consultant, apparently fell foul of Landsvirkjun last autumn over a report she had been commissioned to write on the Thjorsa hydropower project (the report was commissioned by VSO, a consultancy contracted by Landsvirkjun). "I was asked to falsify my report to justify the larger-scale power plans Landsvirkjun wanted," she maintains. "When I refused, it was altered anyway." She went to the press with her story, and almost immediately, she says, found herself out of work. "All the jobs I had in the pipeline were cancelled overnight." Landsvirkjun dismisses Sigurdarsdóttir's allegations as "unsubstantiated". "She was unwilling to name the individuals she was accusing," says Sophusson, adding that every employee who had contact with Sigurdarsdóttir has "signed and published a declaration that these grave allegations were totally unfounded".

The "blue hand" is a slang term for the shadow of influence the Icelandic ruling elite ("the octopus") casts over the individual. Myth or reality, it is an effective force, ensuring self-censorship and caution. Professor Gíslason maintains that Sophusson has telephoned him on several occasions, asking him to reconsider his well-publicised opposition to various hydropower projects.


The Icelandic Nature Conservation Agency, in association with the International Rivers Network, recently produced a highly informative brochure about Karahnjúkar for which it commissioned several independent studies. The result was a coalition of 120 international NGOs - including WWF and Friends Of The Earth - actively campaigning against the project in June 2003. But the government seems to care little for world opinion, as its resumption of whaling demonstrates. Sophusson represents the view of many nationalistic, conservative Icelanders when he mimes squashing a bug under his shoe and says, "Nobody does this to Iceland." Tourism is the fastest growing sector in the economy, the fishing industry the largest. Both stand to be significantly affected if Iceland and its products are boycotted as a means of global protest, as they were during the resumption of whaling in the 1980s. Already, the tourist board speaks of "hundreds, if not thousands" of potential cancellations as a direct result of the whaling controversy: 80% of tourists go to Iceland to experience what the government markets as "unspoiled nature". In a sense, that nature is part of the world's heritage and little has been known about the wholesale destruction about to take place in Karahnjúkar and other parts of the country.


What could stop what poet Jökulsdóttir describes as "a handful of men imposing their destructive dream on a nation which seems half-asleep"?

For writer Guðbergur Bergsson, the key lies in the national

psyche. Icelanders, he says, are political fashion victims, heavily under the spell of the US and oblivious to criticism from activists at home. "What they perceive as 'in' right now is globalisation, so they want to be part of that," says Bergsson, adding that Icelanders hate to look ridiculous. "If the international community can show them how truly ridiculous it is to destroy nature, the very thing they love most, for one aluminium smelter, they may start to think for themselves. They might finally have the guts to speak up and tell their dictatorial government how absolutely they have got this wrong. You have to shame us into change."

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