



MV Hamnavoe arriving at Stromness, Orkney.

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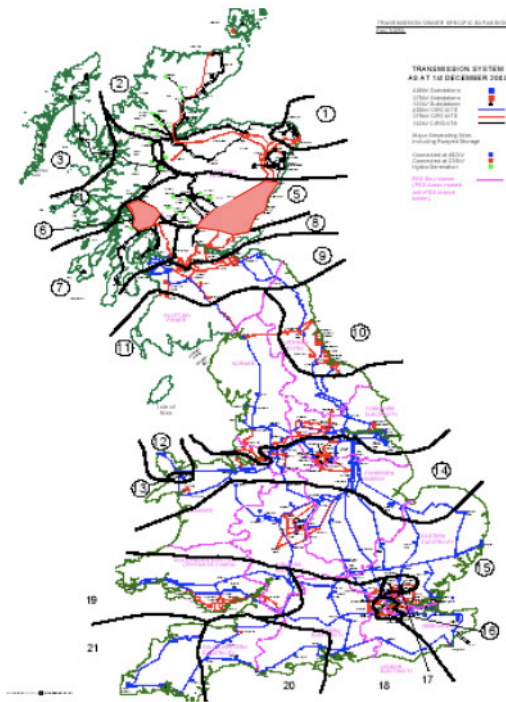
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OrkneyLab:

An archipelago experiment in futures

The starfish phone bleeps and Gary answers the red-flashing call from the local council offices 20 minutes drive and a world away, on the other side of the island. Gary is tele-conferencing in to the meeting, and I'm listening, incensed. For this is not (and never can be) an unbiased, flat calm story. I am living in Orkney. I am in the dangerous waters north of Scotland where Atlantic and North Sea collide. I'm not bobbing along in the River Thames. But up from such city waters two government civil servants have sailed, from the UK Department for Business, Enterprise and Regulatory Reform or BERR.

BERR had commissioned several consultancies, in London, Edinburgh, and Hexham (sites of calmer waters, and calmer winds) to calculate how much a company on the Scottish Islands should be charged to transmit electricity through the National Grid. Their quantitative models corroborate government policy, which performs a southern politics: put up a



Generation Zones for National Grid Charging Methodology, January 2005.

Scottish Energy Foundation (2005) Impact of GB Transmission Charging on Renewable Electricity Generation, Report to the Department for Trade and Industry. Downloaded from www.see.ed.ac.uk/~jbialek/seef_report.pdf on 30 June 2008. pp.33.

wind turbine in South-West Cornwall and the government will pay you £8 per kilowatt, put one up in central London and they will pay you £6 per kilowatt, and then the further north you move from London, the less economically favourable it gets. In the Scottish Islands you have to pay the government £21 per kilowatt to transmit electricity.

This is future-making stuff. One of the civil servants explains, his distant voice fizzing in the air:

We intend to have a strategy by Spring for hitting the 2020 targets...¹

He is incanting the electrons of the phone line to make present the European Union and UK Government's future for electricity production: By the year 2020, 20% of the EU's energy consumption must come from renewable resources. And it is worth noting that in 2006, in the UK, renewables totalled 1.5%.²

¹ These and other quotes are taken from my ethnographic notes made during fieldwork in Orkney, March–November 2008.

² UK Department for Business, Enterprise and Regulatory Reform (2008) UK Renewable Energy Strategy Consultation, BERR, London. Available at www.berr.gov.uk/renewableconsultation

So what's at stake in this Transmission Charging regime is the European Union meeting its 2020 target, the UK government meeting its target, potentially the future climate of the planet, and the reason for this meeting: the participation of Orkney in that future.

BERR's future locates Orkney at the edge of the renewables industry, too far away, too un-important, or as someone on Orkney said:

the people writing the report have spent years trying to install cables up here and they see it as periphery and a pain in the arse.

He was invoking the landscape, between his words the wind blew, birds flew, archaeology and rare flowers filled the soil, farms scattered, it's hard work building infrastructure here. So BERR's state-sponsored future is Thames-centric: generating renewable energy north of the River Thames is made increasingly un-economic. Electrical and political power are seen as flowing together, past the Houses of Parliament in London. The electrical and political power of wind and water are imagined as centralized in the south. That's where people live, that's where the infrastructure goes, is the argument. Most people live in the south. Most people live in cities.



MV Hamnavoe and Stromness in the wind.

But I am in Orkney, where other people live, where the wind blows harder and the water moves faster; there's more power here at the edge, more energy in the landscape. Simply: living with Orcadian wind and waves makes a very different imagined future compared to living with London wind and waves. Neither the landscape nor the future they evoke are the same. But the map says nothing of these differences, of course. As a voice from Edinburgh says on the tele-conference call:

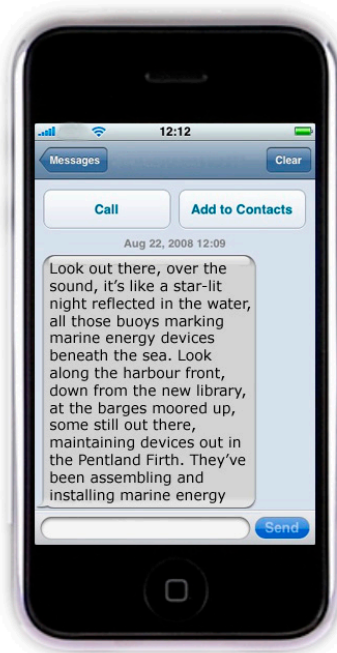
Need to look at the wider issue of what signals it is sending... you are penalising a rich natural resource, an area...

Gary sighs as the meeting closes. Futures are rarely fixed in a single phone call, they congeal and harden in ongoing practices. The civil servants say they will be issuing their guidance to OFGEM, the energy regulator. But I wonder if they realise that they are here because this landscape demanded it of them? They are here because the energy in Orkney wind and waves, seemingly so distant to London, is a current that pulls them measurably closer to their imagined future for 2020. But have they noticed the drift?

It's late afternoon, and Gary heads upstairs back to his desk. I now have to drive to Kirkwall, on the other side of the island, to participate in a public debate on Orkney futures. How will UK government futures made in London, participate in futures imagined and made in Orkney?

Outside in the town of Stromness the wind cries QED: it's blowing hard, lamp-posts swing, sea spray is yanked from the harbour into the air, the ferry wallows as though it's treading water. I shelter against the old school building, pull on hat, gloves; zip up my waterproof, then wade out into the wind, heading home to get my car.

I find respite in a narrow lane, and as I pause, my phone bleeps. It's a lengthy text message, but the time-stamp is 2020, and I know that a future has awoken on the wind, formed a data cloud I cannot see, but my mobile phone can transduce, turning whispered electrons into text:



Ring of Brodgar stone circle.

Look out there, over the sound, it's like a star-lit night reflected in the water, all those buoys marking marine energy devices beneath the sea. Look along the harbour front, down from the new library, at the barges moored up, some still out there, maintaining devices out in the Pentland Firth. They've been assembling and installing marine energy devices at the rate of 100 a year for the last seven years. There's new hotels, new houses, squeezed in above the heritage conservation area. There's a new campus for the researchers and university departments, where the lorry park used to be. Specialist engineers, technology developers, sailors, permit officers, all walk past me in fleece-lined waterproofs. The student residence is filled with doctoral marine biologists, resource managers, archaeologists, and artists. This is the town of Stromness as it helps the UK meet its target for marine renewable energy, all 23 kilometers square of it, out there, on and in the sea.

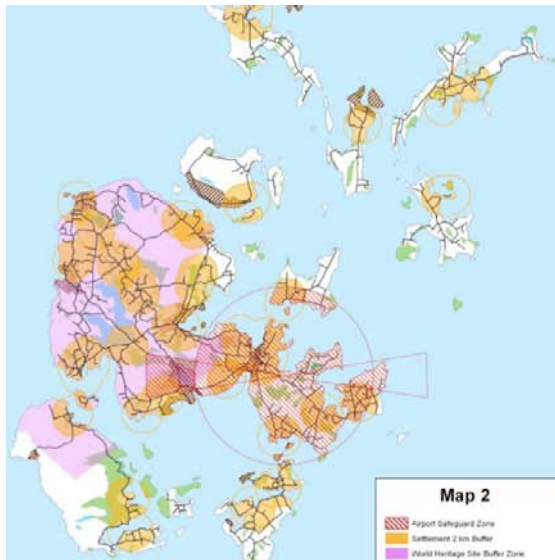
I know the data cloud is imaginary, but it is, as all imaginaries are, located somewhere. It swirls in the wind around me because it is made of substantial stuff. The numbers, the buildings, the technology roadmap, the jobs, the houses, the people, exist as evidence for futures. They are in proposals and agreements I have read, are born of impassioned hopes

I have listened to and written down: the new library is on schedule; the first barge for a tidal turbine device moored. This is a prophecy that is lived, day by day, here. It is not fixed, it floats, but it is not air. It is possibility, and it has more substance than the future imagined by the UK government.

I feel chilled, shiver to disperse the portentous bytes; shake my phone. The text message disappears.

It's a tricky move to reverse my car off the pier, pull out of the narrow cut between old gutting shed and stone wall. I head east out of town, up the steep rise, and then over and down in to the broad Stenness basin, and in to other futures.

Before me are two cloud-soaked lochs, and on the sliver of land between, the Ring of Brodgar stone circle. As the sliver of land stretching out to the stone circle passes, I remember: I'm driving through the World Heritage Site buffer zone, the zone of visual influence that extends out of the Ring of Brodgar. This monumental leakage covers most of west mainland Orkney. The 'Heart of Neolithic Orkney' World Heritage Site leak has been spectacular and painful in recent years. The influence of the World Heritage Site



World Heritage Site Buffer Zone (purple). Orkney Islands Council (2008) Supplementary Guidance On-Shore Wind Energy Development. Map 2. Downloaded http://www.orkney.gov.uk/nqcontent.cfm?a_id=13851&tt=orkneyv2 on 1 April 2009.



Burger Hill wind turbines seen from the Ring of Brodgar.

does not end at its mapped borders; now the surrounding landscape is part of it, it is part of the landscape – as almost any visitor let alone archaeologist will tell you.³ The local council planning department, working with Historic Scotland, has taken careful note in its guidance for future architectures in the zone, particularly wind turbines. I can see the old wind turbines already standing, turning grey on the horizon, but future turbines are fading ghosts. This buffer zone, of which I am momentarily a part as drive in sight of the stones, is where renewable and heritage futures leak into one another. Here, the architectures and socio-economics of Transmission Charging leaks out of the electricity cables into the stone circle; whilst the conservation, interpretation, and beauty of the Ring of Brodgar leaks through the soil into the electricity, into Transmission Charging. These futures cannot now be separated, they are entwined in this place. Here, pasts and futures are being lived

³ See for example: Richards, C. (1996) Monuments as Landscape: Creating the Centre of the World in Late Neolithic Orkney. *World Archaeology*, 28(2), 190–208.

together, are being imagined together with great care.⁴

A car roars from behind, overtakes; someone in a hurry, trying to skip over the waves of tractors and tourists like pebbles. I've travelled beyond the threshold of west mainland, and now swing in a smooth curve around the dark tar edge of the bay, encircling farms and Aberdeen Angus cattle on the slopes of the hill at the heart of the islands.

The MP for Orkney and Shetland drives past. He lives in both landscapes of Orkney and London;

people [in one place] do not have the landscape and perspective to see [the other],

he told me. So he works to get Orkney dirt in to London people; London dirt in to Orkney people.

Transmission Charging has been pushing water up hill for years,

⁴ In speaking of 'leaks' I'm drawing on ideas of topology of flows, and mixing in STS e.g. Mol, A. & Law, J. (1994) Regions, Networks and Fluids: Anaemia and Social Topology. *Social Studies of Science*, 24(4), 641–71.



View from Wideford Hill to the road and Bay of Firth.



St. Magnus Cathedral and the town of Kirkwall.

he had told me. But he finally managed to persuade the chair of OFGEM, the energy regulator, to accept his invitation to visit the islands. And he stood this man at the top of a freezing hill without a coat and lectured him about the hyper-efficiency of wind in Shetland and Orkney.

His landscape was big utility companies, explained the MP. He simply didn't realise the renewable energy industry was serious here in Orkney and Shetland.

We had both chuckled at the story. We knew what the freezing wind, damp heather, and peaty air had done to the chair of OFGEM in his shirt and tie. We knew the islands had got inside him. That's how he knew that things were serious. The blood beating in his wind-chapped ears was telling him so. And we both knew that it was the only way that the regulator would hear. It took island dirt and salt working from the inside out. The landscape had kicked-back from inside the belly of the regulator.⁵ The

⁵ By 'kicked-back' I'm alluding to Karen Barad's work on agential realism. I'm proposing that landscapes are part of the apparatus for knowledge-making. See Barad, K. (2007) Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning, Duke University Press.

landscape had made a difference to Transmission Charging, perhaps more of a difference than the meeting I had just attended.

Stand at the top of a mountain in a gale, or hang on to a trig point as you turn to rime, or stand at the top of a hill in an Orkney or Shetland winter, and you will understand, too. My words don't do it, I know. They do not translate those things that my bones know, that cannot be cut out as immutable mobile bits of knowledge.⁶

My car spins on around the hill, and finally to the red sandstone beacon of St. Magnus cathedral, which draws the northern islands together, anchors them in the sea. There's the sheep on the grass outside the industrial estate, the roundabout, the wind-bitten petrol station, and on to my usual car park.

⁶ For more on 'immutable mobile' in STS see Latour, B. (1987) Science in Action: How to Follow Scientists and Engineers through Society, Cambridge MA, Harvard University Press.

I settle in to the warm church hall at the back, next to some familiar faces. The event is part of the local science festival, a social experiment to discuss Orkney futures and debate what to do this winter: for here fuel poverty is major socio-economic issue, and wind energy is something mundane you contest with as you hang on to your car door whilst loading the shopping.

The evening takes us through ten brief presentations on issues ranging from energy efficiency to farming. The speakers are inspiring, straightforward, speaking with both heart and considerable expertise. On the issue of 'Environment, Conservation & Biodiversity' I hear and note one speaker say:

the main inspiration [for artists here] is Orkney itself. I am proud of being part of this place... As Orcadians we should decide what is important now and in the future. What we do should benefit as many people as possible [in the islands]...

Local benefits, local control, keep local control, begins to echo around the room in the ensuing debate.

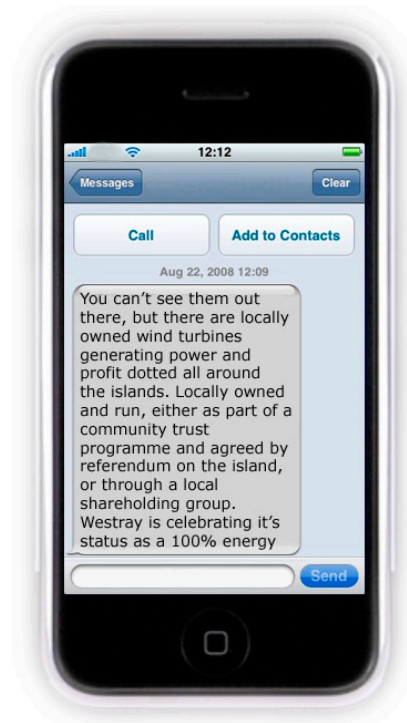
We're then asked to vote on what action to take. There are two clear headline actions as hands raise:

support local and community ownership; and, all of us to take energy saving measures.

As the evening closes and I catch up with people, it occurs to me that local ownership is already intrinsic to the future of renewable energy in Orkney. Self-determinism has already been built-in to the electricity infrastructure in the form of the Regional Power Zone. Orkney was one of the first places in the country where the electricity company established a local power management system. It's an experiment in managing the always distributed nature of renewable energy, so unlike centralized nuclear, coal or gas power. As a renewable energy consultant told me,

in Orkney if you generate electricity it will be used locally, you can say that for sure, unlike in other places.

In Orkney, Transmission Charging is not about a UK Government or European Union future, it is about already lived local futures; it is already part of the locally controlled Regional Power Zone. Self-determination goes all the way down: people, place, technologies in the ground and under the sea. It's an effect of the archipelago being too far and too distributed for the usual forms of power;



the landscape, the seascape, resists centralization, promotes localization.

The air is glittering fresh and dark outside the church hall as I walk through the alleyways of Kirkwall back to my car. I shiver, the cold beginning to bite, stop to pull my scarf tighter. My phone bleeps. It's another text message, time-stamped in the year 2020 again. Another data cloud of future imaginaries hangs around me, its bits and bytes of evidence clinging together, forming pulse-coded shapes that my phone can read, transduce into text:

You can't see them out there, but there are locally owned wind turbines generating power and profit dotted all around the islands. Locally owned and run, either as part of a community trust programme and agreed by referendum on the island, or through a local shareholding group. Westray is celebrating it's status as a 100% energy self-sufficient island, which they've been pushing for since 1998, turning waste cooking fat into biofuel, and developing a farm-based anaerobic digester system for turning cattle slurry into fuel. I've just dropped in to the Energy Agency down the road, a council run organisation that's financially and electrically powered by its own wind turbine. They're promoting the archipelago as a test-centre for

experimental environmental science, bringing together national agencies, universities, companies to work on projects such as using willow-bark as a fuel. The local business association has just attracted a major international finance company to the islands – due to renewable energy Orkney is becoming a place for high-powered computing that's no longer economically viable in the City of London.

This imagined future is all material, all transmitted in bits and bytes of information from conversations, meetings, more and less well-known projects. A lived future woven into form through the modulation of the message. And it is only 'a' future, located in particular people and places; farmers, fishers, shopkeepers in Orkney imagine and make their futures differently.

I shake my phone to disperse the cloud around me. The text message disappears.

I pass the local radio station, reach my car, and take the arterial main road home.



Stromness harbour at night.

Headlights glare.

Orkney is an experimental place, not in the sense of being some island-laboratory, isolated for observation by those outside; Orkney is deeply connected by the sea not separated by it. It is experimental in the sense of an experimental tinkering with futures. The version of tinkering that is all about an un-professionalised, expert, and very personal care for people, places, and things.⁷ Orkney is a place where futures are not systematically tried and tested, but where futures are quickly crafted from what is to hand and tinkered with, parts replaced as and when to keep it going. This is Orkney as OrkneyLab. But being an experimental lab, at the edge and on the edge, is hard, as a local academic had noted:

We see problems and feedback quickly... we can move quickly, but when it [finally] happens in a in a big metropolitan city, with its money and location, you cannot compete...

⁷ See discussions of tinkering in STS such as: Mol, A. (2006) Proving or Improving: On Health Care Research as a Form of Self-Reflection. *Qualitative Health Research*, 16(3), 405-14.

The car rises up out of the World Heritage Site buffer zone, and I am called home by the white and red lights of Stromness.

Tim Ingold has long talked about archaeology as an act of remembrance in the landscape; 'you know as you go, not before you go'.⁸ Landscape is lived, it is remembered, but I would add that it also foretold. If archaeology is an act of lived remembrance, then Future Archaeology is an act of lived prophecy. The future is no less lived, no less material, no less in need of care, than the past; you know the future as you go. The Future Archaeologist sent me the text messages as prophetic interpretations from fragments of evidence that are not so very different to the interpretations from fragments of evidence made by archaeologists.

⁸ Ingold, T. (2000) *To Journey Along a Way of Life: Maps, Wayfinding and Navigation. The Perception of the Environment: Essays in Liveliness, Dwelling and Skill.* London, Routledge. pp.230.



View of high tide at night from Clouston's Pier, Stromness.

I remember those text messages, all the bits of evidence that gave them form. The UK Government imagines Orkney as peripheral to energy futures. But Orkney has long been a world centre for experimental futures, tinkering with what is possible with what is to hand: it was the test-site for a prior abandoned future for wind power in the 1980s; it is the current site for the European Marine Energy Centre. Orkney energy futures have archaeology, flesh, skin, breath, business investment... planning permission. Rather than imagining Orkney at the periphery of energy futures, perhaps the UK Government should stop to consider why it is at the periphery of the experimental futures in Orkney – and why the future archaeology there is so generative.

I reverse my car down on to the pier; breath in the air, listen for the engines of the boat and the lapping of the harbour water. Tide's in.

Acknowledgements

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