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## **Demonstrating Doability** The Networking Practices of a Danish Renewable Energy Island

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# Demonstrating Doability

## The Networking Practices of a Danish Renewable Energy Island

Irina Papazu

### Abstract

*This article analyses the making of a public demonstration project with the aid of online and offline ethnographic methods, also known as assemblage ethnography. The object of demonstration is Samsø, a small tourism and farming island that was appointed Denmark's Renewable Energy Island and embarked on a ten-year experiment to become energy self-sufficient. Through demonstrations of this achievement to national and international audiences, Samsø came to exemplify the practical doability of sustainability initiatives. I ask how the island managed to become this flexible and widely known exemplar capable of traversing multiple geographic and thematic zones 'across scales, sites, and practices' (Wahlberg 2021). The study suggests that while Web-based activities played a role, a promotional project like the Renewable Energy Island is as dependent as ever on socio-material practices such as travelling, participating in projects and giving presentations. Drawing on Science and Technology Studies literatures on public demonstrations and quali-quantitative network analysis, the study combines ethnographic fieldwork with digital network mapping to analyse four manifestations of Samsø in various networks. I argue that such assemblage ethnography is essential if we are to grasp how movements on and off the Web are co-implicated in the establishment of exemplars such as the Renewable Energy Island. In the face of imminent climate crisis and our apparent inability to implement large-scale solutions, it is more relevant than ever that we study the 'small' and local cases such as Samsø and what makes them able to escape their local conditions and travel far and wide, perhaps leading the way to a more sustainable future.*

### Keywords

renewable energy island, climate change, public demonstrations, quali-quantitative methods, assemblage ethnography

### Introduction<sup>1</sup>

"This is an island and therefore Unreal"

(W. H. Auden, *Letters from Iceland*, 1937, in Lezaun 2011)

"With no traffic lights on the island and few street lights, driving its roads on a cloudless night is like piercing a black cloud. There is one movie theater, few cars and even fewer buses, except for summer, when thousands of tourists multiply the population. Yet last year, Samsø (pronounced SOME-suh) completed a 10-year experiment to see whether it could become energy self-sufficient. The islanders, with generous amounts of aid from mainland Denmark, busily set themselves about erecting wind turbines, installing nonpolluting straw-burning furnaces to heat their sturdy brick houses and placing panels here and there to create electricity from the island's sparse sunshine.

By their own accounts, the islanders have met the goal. For energy experts, the crucial measurement is called energy density, or the amount of energy produced per unit of area, and it should be at least 2 watts for every square meter, or 11 square feet. 'We just met it,' said Soren

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<sup>1</sup> The first version of this article was finalized for publication in 2015 and received generous comments by Noortje Marres who also acted as supervisor during the initial writing process. The outlet originally chosen turned out to be a project that never materialized, and after years in the drawer I submitted the article to STS Encounters. Here, I want to thank Anders Kristian Munk, Pablo Velasco, Torben Elgaard Jensen and Peter Danholt for their thoughtful and thorough reviews and comments on earlier versions of this article.

Hermansen, the director of the local Energy Academy, a former farmer who is a consultant to the islanders”

Source: New York Times, September 29 2009 (reference in appendix 1)

Searching the Web for mentions of Samsø, Denmark’s Renewable Energy Island since 1997, you will find innumerable articles like this *New York Times* entry. In these articles a basic narrative can be recognized which goes something like this: Samsø, a traditional Danish farming and tourism island of 4,000 inhabitants, was appointed Denmark’s Renewable Energy Island (REI) by the Danish Ministry of the Environment in 1997. Within the next ten years, the island was to become a self-sufficient user and producer of renewable energy with the aid of well-known Danish energy technologies like wind turbines. Through joint community efforts the islanders made it. The experiment is widely considered a success which communities worldwide can learn from. Branded Denmark’s Renewable Energy Island, the project had an international outlook from the start. This framing presumes that the local, self-contained doing of sustainability was not enough; it had to be seen and heard about, even replicated. Samsø joined its first EU project in 1998 and first appeared in the *New York Times* in 1999. The island was to become a window to the world showcasing Danish energy technology and participatory community practices, a demonstration project oriented toward national as well as international audiences (Worsaae 1997).

As I arrived on Samsø in 2013 to conduct my doctoral fieldwork at the island’s Energy Academy, the constant flow of visitors, the numerous projects that filled the days of the Academy employees, the talk among the staff about existing and possible new partnerships and networks; the sheer level of activity in this project house on a meadow by the beach on Samsø alerted me to the fact that even though the REI project had come to its conclusion years earlier in 2007, hard work was still being invested in maintaining the island’s position of influence. Today, the renewable energy (RE) technologies showcased on the island are

too dated to ‘do the talking’ on their own, and, hence, activities such as storytelling, travelling, receiving visitors and participation in new projects are important to the Energy Academy. The organization was founded in 2007 upon the conclusion of the REI project to communicate the project’s successes and continue the green project agenda on and off the island. At the time of the fieldwork, Søren Hermansen, the Academy director, had around one hundred travel days a year, and he received more than a thousand personally addressed emails every month with suggestions for new collaborations, invitations for meetings, etc. (pers. communication, April 2015).

In the *New York Times* article above, Samsø loses the Danish ‘ø’ and becomes ‘Samsø’, acquiring an internationalized name that allows Samsø-the-model to travel more smoothly. But it also suggests that there are several versions of Samsø in circulation, each of them demonstrating the island’s accomplishments to diverse audiences, from American newspaper readers to small island states like Sumba in the Indian Ocean (Creed 2016) and various EU programs (IMPLEMENT 2014). Following these observations, the question I ask in this article is: how did a local initiative like Samsø’s Energy Island achieve such global resonance?

The physical geography of an island makes it suitable for demonstration experiments: because the boundaries of the community are clear, results appear more easily calculable and projects more manageable. Due to their isolation, islands are often given exemplary status and perceived as “spaces that echo the ideal conditions of the laboratory” (Greenhough 2006: 226; see also Gugganig and Klimburg-Witjes 2021). Not just natural science phenomena (Palsson and Rabinow 1999, Rainbird 1999) but also political, social and technological processes may be demonstrated on an island due to its natural isolation from its surroundings (e.g. Watts 2012, Lezaun 2011, Laurent et al. 2021). STS has a long tradition for studying experiments as public demonstrations and for considering the ‘world-making’ (see Latour 1983) power of the exemplary experiment. The scientific demonstration, a method through which the ‘truth’ of scientific innovations is proven to an audience of witnesses, is understood as a political act (see Shapin and Schaffer

1989 for the seminal example and e.g. Rosental 2013, Barry 2001, Marres 2013, Marres 20019, Marres 2012, Lezaun et al. 2013). As Barry argues, demonstration, “whether it is understood in a technical or a political sense, is, or can be made to be, a political matter. On the one hand, because there is a politics of who can, and who should be allowed and trusted to witness a demonstration... On the other hand, public demonstration is political, because the telling of a truth in public can never be described as disinterested – it is always intended to have effects on, or challenge the minds, or affect the conduct of others” (Barry 1999: 76-77). By taking on the status and role of a demonstration project, Samsø becomes a political actor concerned with assembling a public around its example by using Samsø as “an instrument of public involvement” (Marres 2009: 120). As will be elaborated below, Samsø’s innovation is not a technical or a technological one, strictly speaking, but it is still a demonstration of what can be attained through the deployment of technological solutions.

In his analysis of the Norwegian merchant ship *M/S Balao*, which was redesigned as an experiment in workplace democracy, Javier Lezaun reflects on the nature of the demonstration experiment: “the challenge is always how to create the conditions for the dissemination, amplification or proliferation of affects generated in political laboratories” (Lezaun 2011: 576). A ship and an island, both surrounded by water, must work hard to create the conditions that will allow their experiences to proliferate. Being a demonstration island or a test site implies a degree of isolation; the test site must be discernible and different from its surroundings. Ties must be severed, an interplay between attachments and detachments (Jensen and Winthereik 2015) bringing new relations into being. This is the focus of this article: to illuminate how Denmark’s Renewable Energy Island Samsø managed to travel ‘across scales, sites, and practices’ (Wahlberg 2022) and traverse multiple zones, geographic as well as thematic.

A successful Renewable Energy Island challenges through its very example the fossil fuel-based economy by suggesting to policy makers and other leading actors and citizens worldwide the possibility of a

different future, thus providing a practice-based commentary on the climate challenge as well as on geopolitical debates about energy dependence. Samsø’s demonstration of the doability of sustainability initiatives is a hopeful and potentially far-reaching one, but, as the analysis of four empirical examples will show, it takes time, effort and resources to become a well-known demonstrator. The article investigates this process by bringing together the sociology of public demonstrations with a quali-quantitative methodology combining digital methods analysis and ethnographic fieldwork into what has been referred to as ‘assemblage ethnography’ (Blok 2021, Wahlberg 2022).

## **The Samsø Case Study: Becoming a demonstration island**

In the fall of 2013 and spring of 2014 I did ethnographic fieldwork on Samsø. For five months, I was a full-time member of the small staff of 10 in the green project organization spearheading the island’s past and current RE projects, Samsø Energy Academy. The Energy Academy was a product of the REI project, built in 2006-7 and directed by Søren Hermansen, the main organizer and communicator of the REI Project. From my workspace at the Energy Academy, I ‘shadowed’ the project managers and staff’s work (Czarniawska 2008), participating where and when I could, jotting down fieldnotes, conducting countless informal conversations and over 30 formal interviews with central actors around the island and reading old and new project documents, newspaper articles and reports. What guided the explorative data generation process was an interest in understanding how Samsø’s green energy transition came about and what have been its effects on the island and beyond.

The story of the Renewable Energy Island Samsø starts with a narrative of crisis. By the end of the nineties, the island’s slaughterhouse, one of the largest employers on the island, faced closure, and one hundred people faced unemployment. Islanders telling me about that time

describe the closure in dramatic terms: it was as if an atomic bomb fell on Samsø; it was as if Samsø itself was to close down; or, in the words of the then mayor, “Samsø might as well have sunk into the ocean; that is how we felt back then” (see Papazu 2016b). The REI project presented itself at just the right time. The islanders were introduced to the rather abstract idea of becoming Denmark’s ‘Renewable Energy Island’ - an EU policy concept related to the White Paper: ‘Energy for the future: Renewable Sources of Energy’, adopted in 1998, denoting ‘pioneer communities’ aiming at achieving one hundred percent self-sufficiency through renewable energy sources (Energistyrelsen 1998) - by a local master smith whose keen eye for business had earned him the nickname ‘the goldsmith’. The smith, who was also chairman of the local business council, went to a council meeting proclaiming, in his own words, “‘Friends, we are going to make Samsø self-sufficient with renewable energy!’ The manager of the slaughterhouse said”, he continued, “‘the smith is going crazy, we could never do something like that!’, but the mayor, who was also a part of the council, was quick to see the possibilities for local job creation, which was also my sole interest as head of the business council and master smith. When we set up Samsø’s first district heating plant in the nineteen-eighties, it generated employment for my firm, so the possibilities were easy to see.” (interview 2014).

With the major players on board, Samsø entered the competition issued by the Ministry of the Environment. An engineer from the mainland was hired to develop the pre-project study on the basis of which the winner would be chosen. Samsø competed with three other islands and one peninsula: Bornholm, Ærø, Møn and Thyholm. Each was given 125,000 Danish Kroner (EUR 17,000) by the Ministry for the development of the pre-study. After the appointment no more funds were promised, and the island would have to stand on its own feet, which it did by gaining broad support from the islanders who could see the ‘sense’ in entering a project promising to imbue the island with new energy (see Papazu 2016a). Aside from the engineer from the mainland who remained part of the project, all human and financial

resources that went into the project were local (see Papazu 2021).

The practical work involved in becoming energy self-sufficient was a locally grounded endeavour. Getting the islanders on board with the many RE projects – establishing wind turbine guilds, building district heating plants – required home visits, phone calls and meetings, all arranged by local working groups and orchestrated by the organization *Energiselskabet* (the Energy Company), a union of Samsø actors in which farmers, citizens, the local municipality, and the island’s businesses were represented. Throughout the project, local democracy and community ownership were practised in order to secure both the project’s legitimacy and its practical realisation. In project reports, local aspects are strongly emphasized: for example, rather than hiring skilled labour from the mainland, tertiary training was provided for local workers who learned to oversee the wind turbines. The RE technologies based on sun, wind, straw and wood were chosen because the resources were locally available and the solutions technically manageable (*Samsø Energiselskab* 1997, see also Papazu 2016a).

Despite this localism, the aim of the REI project has to a large extent been to strengthen the island’s ties to the mainland and the rest of the world, and indeed to become less peripheral in a country where centralization is an ever bigger threat to small communities facing depopulation, unemployment and the closure of vital institutions. As the chief executive of Samsø Municipality formulated it, “we can’t exist as an island community if we’re not completely entangled in Danish society. Instead of breaking loose, we need to strengthen our connections”. On Samsø, there is a strong sense of insularity, but paradoxically, the REI project that has made Samsø virtually energy self-sufficient has also brought Samsø closer to the rest of Denmark and the world by putting Samsø on the map and making Samsø relevant as an interesting case, a partner in projects, a place to seek knowledge and inspiration. This is localism and self-sufficiency with the purpose of overcoming the confinement to the local. Informed by STS, the networking activities performed by the islanders can be said to ‘bring the global into being’ (e.g. Callon and Latour 1981, Law and Mol 2008, Marcus 1995). By

enabling a 'local' island project to 'go global' through its circulation in various networks, dispersed and distant places and actors become connected, and these connections help turn Samsø into an influential demonstration project, which in turn helps secure the viability of the island community as outside interest and energy tourists keep pouring into the island.

Evidently, Samsø does not travel on its own but is brought into circulation through networking efforts: travels, meetings, conferences, media reports, receiving guests. The project developers have never neglected to care for the project's international connections. Here, Hermansen explains why this extroverted attitude is considered necessary:

"The internal perspective wouldn't work if we didn't have people abroad. Getting out there is extremely important to our value. And when we invite people here, there has to be something worth coming for... The narrative has to have a solid basis in reality. I can't travel the world telling the story about Samsø if you can't come here and experience for yourself the concrete basis of my stories" (June 2014).

A main concern for the island actors has been to produce similar results in distant places, thereby increasing the project's 'value' as a demonstration project. Samsø is dependent on partnerships, on new projects and collaborations, funds and attention from abroad; all products of the island's networking activities. The storytelling which Hermansen refers to is an integral part of his job as a famous ambassador of Samsø (see Papazu 2018). He and the rest of the Energy Academy staff form part of what he calls "a travelling climate circus", a group of international energy professionals who dominate conferences with their strong communication skills and lived stories of RE projects. This storytelling effort is costly in terms of time and resources, but vital. Stories travel easily. While to Hermansen these stories may seem less 'real' than what happens on the ground, I suggest that the narratives

about Samsø, exemplified in the *New York Times* article above, present versions of the island that are no less consequential than what happens on the ground. They, too, produce real results. They participate in forging relations and building networks.

Still, the credibility of the stories, Hermansen stresses, depends on the firmness of the island's accomplishments. As noted, one of the Academy's foremost tasks is hosting guests on the island. Around five thousand international guests visit each year, attending workshops, listening to presentations and touring the island on guided *Energy Safaris*. On an Energy Safari, the guests visit the old wind turbines, and they are invited to feel the heat inside the straw-fired district heating plants. They watch the conveyor belt transport straw bales into large incinerators and the resulting ashes being led into an outside container. When full, the ashes are spread on the farmers' fields for fertilization. Sometimes, the guests are allowed to climb a wind turbine to experience Samsø from above, hovering seventy meters above the ground, gasping for breath after the climb up the primitive ladder inside the turbine. Every part of the tour is photographed by the visitors and every experience accompanied by stories told by the local Academy guide about the processes of collaboration through which the technologies became part of island life. RE technologies quickly become outdated, and Samsø's technologies were already well-known in the nineties. It is through the stories and photographs that their status as powerful demonstrations is maintained, a testament to Samsø's accomplishments enacting Samsø as Denmark's RE Island, a practical example of the doability of RE initiatives. On a basic level, it qualifies Samsø as a demonstration site by producing its own documentations, thanks to its eager visitors.

Exploring Samsø's different networks of influence brings into view the spider's web of connections spun from the island to secure its continued relevance as a model of the doability of local RE transitions and community-driven sustainability initiatives. I will identify and describe four examples of this networking activity. Each of them in different ways privileges storytelling as the dominant mode of demonstration.

In STS, storytelling events are considered participants in the making of reality (Latour 2001). Following Winthereik and Verran, stories “have in them the capacity to re-present the world in ways that are generative for the people and practices that the stories are about” (Winthereik and Verran 2012: 37). I argue that it is this *generative* quality of the RE Island, its capacity to inspire similar doings in other places, that makes Samsø a successful demonstration.

## Studying networking practices with assemblage ethnography

At an early stage in fieldwork I noticed the centrality of the Web to the Energy Academy actors’ networking practices. As the Director put it, “When you type in ‘Samsø’ [on the Web], you will get *a lot* of hits on the search engines, and it’s not necessarily because we’re world-famous; it’s because a lot of people have been here. And they’ve written about us and uploaded videos and linked to us” (June 2014). Samsø’s favorable position on search engines is of great PR value, Hermansen continues; a Danish multinational like *Grundfos*, a leading pump manufacturer with a green image, might choose to cooperate with Samsø rather than other Danish localities simply because “we’re easier to find online.” With the offline and the online so tightly entwined in the Academy’s activities, a methodological approach attuned to this entanglement is called for if we are to capture the nuances of the case. This led me to assemblage ethnography, which social anthropologist Ayo Wahlberg defines as an approach of “tracing out and understanding social phenomena as they form *across scales, sites, and practices*” (2022: 126). Anders Blok adds to this that the ‘assemblage’ in assemblage ethnography has the double meaning of, first, denoting an ANT-oriented appreciation of the heterogeneity of connections that make up sociomaterial phenomena, and, second, emphasizing that such an analysis may be made up of a variety of data sources and observations (2021: 145). More than a mixed methods approach, the assemblage ethnographer will likely combine

field observations with digital data sources to produce an ethnography that goes beyond the bounded field site (Downey and Dumit 1997). This allows for a both distributed and broad and thematically deep understanding of the phenomenon under study (Blok 2021: 149).

In my assemblage ethnography, I combine the classic ethnographic methods and data sources (documents, fieldnotes, interview transcripts) with the mapping of digital issue networks taking the Energy Academy website as my starting point, as well as a hand-drawn network map and a PowerPoint presentation produced by Energy Academy actors. For the Web-based network maps I used the network analysis and visualisation tool IssueCrawler, developed by ANT-inspired researchers (Marres and Rogers 2008). This tool, the technical intricacies of which will be discussed in the presentation of the two online networks below, was widely used at the time of writing but is by now considered dated and rather crude, as more advanced tools, such as the web crawler *Hyphe*, have taken its place. Centrally, *Hyphe* allows for curation of the websites resulting from the web-based crawl; a core principle in current quali-quantitative digital methods (Munk 2019, Jacomy et al. 2016; see also Borch et al. 2020, Blok et al. 2017), as without curation the network will partly be made up of nodes that are relevant to the phenomenon under study, but will also contain nodes that end up in the network as artefacts of the media involved in the crawl. These nodes simply reflect the media and societal environment of the studied phenomenon, which makes the network less issue-specific.

By approaching the Renewable Energy Island as a phenomenon the boundaries of which are constantly defined and redefined through diverse networking practices, the network analyses in this paper do not respect the boundaries of the Web, and, hence, the analysis will not treat the mapping of the networks around Samsø as an exclusively Web-based exercise. By dividing my attention between the Web and the many other representations of connections that Samsø both actively makes and finds itself part of, such as a hand-drawn network map and a PowerPoint presentation shown to visiting tourists, my use of assemblage ethnography connects to the notion of the public demonstration.



As Stark and Pavel note, “public demonstrations are increasingly digital demonstrations” (Stark and Pavel 2008: 32; see also Rosental 2015). By analysing Samsø’s networking activities in the multiple forms that they take, my analysis nuances Stark and Pavel’s claim by aiming for a flexibility that highlights the ways in which Samsø’s advocates seduce their audiences around the world by involving them in ever-unfolding demonstrations of the REI experiment, thus demonstrating Samsø’s continued relevance years after the original project was accomplished. In the analysis, the network is not just a theoretical abstraction; it is produced and encountered in the field, and these self-made networks enable an alternative understanding of Samsø’s movements as they participate in demonstrating Samsø’s far-reaching influence. Taken together, the examples describe the making of an exemplary project through network mapping as an indigeneous practice. The analysis discusses three depictions of Samsø’s networks of influence and one of the crucial activities undertaken to shape these networks. The first example describes the way in which the Energy Academy presents itself to its visitors. This activity, where visitors ‘see for themselves that there is something worth coming for’ on Samsø (to refer to the above quote from Hermansen), is crucial in the forging of networks and helps us to appreciate how public demonstrations do net-work (Marres 2006) and lay the foundations for further action.

## Analysis

### *Visiting the Energy Academy*

As Samsø Energy Academy opens its doors to five thousand annual visitors – a core daily work practice for the Academy staff – nothing in terms of the framing of the event is left to chance. The building, designed by internationally renowned architects Arkitema, is built sustainably with natural materials by local workers and easily accommodates the large number of visitors. The reception area is equipped with television screens showing films about Samsø. Next to the TVs the words *past, present, future, local, regional, national, global, individual* and *collective*

are written on the walls. Through the panorama windows one can look out on a landscape of grass fields and the sea where a natural, down-to-earth version of Samsø is displayed.

When the visitors – industry groups, national delegates, students; several groups each week – enter the Academy, they are asked to find their home country on a map of the world and circle it. The map allows the staff to keep track of the visitors’ origins, making visible Samsø’s global connections, while sending the message to the guests that they have come to a place of international interest and relevance. This setting is designed to provide a proper frame for the audiences to take in the messages to be communicated.

A ubiquitous element in the staff’s presentations is the Prezi or PowerPoint show. Although the visitors are encouraged to participate actively – “We don’t want the international visitors to just sit back and listen; we want them to be in the field with us, so we always ask them: What can you do? How can you imagine you might contribute where *you* live?” (daily manager, September 2013) – the PowerPoint presentation is central to the Academy representatives’ communication practices. Each presenter makes his or her own PowerPoint shows, but a series of three slides has become something of a classic appearing in many presentations.



Figure 1: PowerPoint slides, September 2013

The first PowerPoint slide shows a standard map of Denmark with Samsø in the middle between Jutland and Sealand. A circle separates Denmark from neighbouring Sweden and Germany. The caption reads

“Samsø – in the middle of Denmark”. The message comes across as an uncontroversial, primarily geographical statement.

Moving to slide two, “Samsø – in the middle of Europe”, we see the geographical map of Europe. Again, a white circle has been added with Samsø in the middle, thus in the middle of Europe. At this point, the visitors usually smile; they see where this is going.

The third slide is a patently manipulated map of the world that has been twisted and turned to yield the desired effect. Again, the white circle is drawn so that Samsø appears to be in the center of the map, thus in the center of the world. In this world, where the Arctic and Europe have made it into the center at the expense of the Global South and Antarctica which have all but disappeared, Samsø is, the caption states, “the center of the world”. Underneath the picture, a quote from a famous Danish poet and mathematician reads: “Those who want to change the world may want to start from its center, thus starting with themselves”. At this point, everyone laughs, realizing that they are being manipulated, and returning guests might exclaim, as the interpreter for a Hungarian delegation did when I was present, “Haha, I know this picture! Samsø in the middle of the world!”

A negotiation of realities is taking place (Law 2009: 13). Samsø is framed as a geographical place and simultaneously as more than that, as something that defies its own geographical boundaries, thus communicating a political message: Samsø will not be held back on account of its size or geographical position. Samsø is enacted as national, regional and global, all at once, just as the inscriptions on the wall in the welcoming area anticipated. The software used, PowerPoint slides, are “[a]ssemblages framed in particular ways”; like stories, they do realities (Law 2009: 2, Stark and Paravel 2008: 37), and as such they are perfect devices of public demonstrations. By virtue of the quote on slide three, the slides become self-conscious, ironic. They communicate to the audience that the overt manipulation of Samsø’s size is an invitation to think big, no matter how insignificant your starting point. A request, echoing Callon and Latour (1981), not to let yourself be held back by size. As such, the presentation seeks to empower the

viewer *and* Samsø at the same time, inviting visitors into the process of ‘changing the world’ and calling upon the viewer to contribute. In this way, the Academy’s visitors become not merely witnesses to a public demonstration, but participants and members of Samsø’s networks, and Samsø maintains its narrative of possibility and doability, rather than lapsing into that which might be the danger: becoming the exception. As highlighted by Laurent et al. (2021), islands are paradoxical spaces, at once exceptional and scalable. By welcoming visitors in large numbers, the Energy Academy engages existing networks and establishes new relations through that act of persuasion and engagement which is the public demonstration event.

### A Hand-Drawn Network Map of the World

The Academy director Hermansen stresses how Samsø’s networks have developed over time, rest on social relations and are maintained through travels and mutual visits: “I think networks need to be based on recognition, on that family feeling. You need to be able to recognise yourself in the network”, he told me. Hermansen, as the member of the Energy Academy who does by far the most travelling, has a hard time distinguishing between his personal networks and the Academy’s and Samsø’s. Still, he talks about representing something bigger than himself, that he travels as a delegate of the island. He describes himself as a kind of neutral arbiter representing the collective accomplishment of Samsø – as opposed to influential characters at the time such as Al Gore or Nicholas Stern who in his view act as climate gurus representing

depicts the hand-drawn network that resulted from the exercise – with

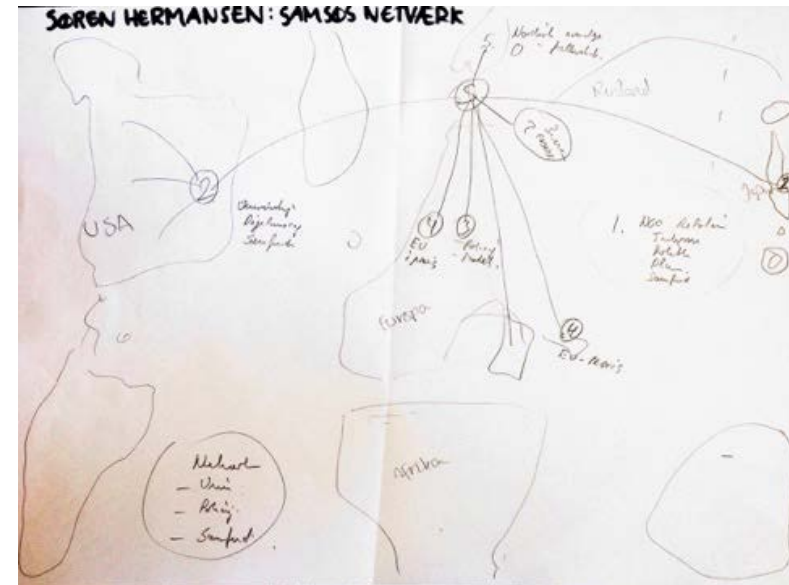


Figure 2: Drawing, June 2014

Hermansen’s description of Samsø’s networks, in his own words:

**1. Japan:** The NGO relation, interests, politics, plans, a bit of industry, society. Actually, our activities in Japan pretty much resemble our activities in Denmark, they operate on the same levels of society.

**2. USA:** Primarily connected through the Danish embassy. Diplomacy, universities, society.

**3. Brussels:** Policy and model. The EU thinks we’re a good model for what they would like to see as European policy.

**4. The Netherlands and Greece, Italy, Spain, Portugal, the Canary Islands:** EU in practice, concrete projects. We share an interest in becoming part of EU programs that support our local development.

**5. The Nordic countries:** Community. The countries work well together because we share the same cultural background. Most other places are extremely market-oriented, but in the Nordic countries the political visions guide the work, most of the time.

6. **The Third World** (forms only a small part of the network): We are considered an example in e.g. Zimbabwe, Bhutan, Mongolia. But it isn't our core thing, we aren't part of DANIDA [the public Danish International Development Agency]. But we're small enough in size to be an interesting development project, and we're big enough to be relevant as a model for e.g. developing a Pacific island.

In drawing this global network map, Hermansen demonstrates Samsø's global influence by showing how the island's networks extend across most regions of the world. He portrays Samsø as a versatile and variable actor that assumes different roles in different contexts and relies on varying types of relations; some personal, some bureaucratic, other diplomatic. In Japan, the predominant version of Samsø is one emphasizing 'community power' and the principles of shared ownership and cooperative, local energy projects. This network is founded on Hermansen's personal relationship with activist and director of the Japanese Institute for Sustainable Energy Policies, Tetsunari Iida. Samsø's European network as depicted on the map is based on the island's status as an exemplary project. This zone of influence is maintained through continuous participation in EU-based RE projects and is reliant on the EU's continued willingness to support regional energy projects. This network is more bureaucratic and less based on personal ties, and Samsø typically functions as a consultant or senior participant helping to steer new projects.

In the developing countries of the south, Samsø is a model, simply, of the successful local development project. Due to Samsø's limited size, the island's experiences can be more or less directly applied, or so it is believed, to rural areas in need of development. Energy and sustainability are not necessary parts of the application of Samsø's experiences in this geographical area. Samsø's American network rests, to a large extent, upon Hermansen's willingness to travel far to give lectures in universities and government institutions in Washington. As a relatively new network, it is dependent on diplomatic ties; informal ties have yet to form to the same extent as in e.g. Japan. Whereas the EU, Scandinavia and 'Third World' networks are primarily project-based,

the US and Japan networks rely on Hermansen's personal presence as Samsø's public image and the person who holds the connections. Samsø, according to the director's map, covers a wide spectrum of applications: from local democracy and rural development to RE projects and political-educational relations.

Samsø being such a versatile actor, what is the island *not*, according to the director? Samsø is not about market-based solutions. The Energy Academy will not try to sell you anything except ideas: "We are not out to shove wind turbines down people's throats". Samsø is not primarily about energy technologies, "People don't visit Samsø to see outdated wind turbines; they come to learn about society and policy", Hermansen stresses. This is reflected in the fact that not all of Samsø's applications are related to energy or climate change. The argument is not that Samsø is an all-encompassing model capable of accommodating *every* desire or interest. Still, to judge from the hand-drawn network map, it seems that one of the core characteristics of this RE island, possibly the backbone of its success as a demonstration project, is its ability to circulate network-specific versions of itself, adjusted to each specific context.

## Samsø on the Web

### *Samsø's Organizational Network*

Moving from hand-drawn to Web-based networks, my first digital endeavour is to localize the Energy Academy's "home" or ego-network: the Academy's immediate organizational network as it looks from the position of Samsø stakeholders according to the Web. In which projects does the Academy participate, who are its collaborators and funders, what are the terms on which it collaborates? This is one version of Samsø according to the Web. Marres and Rogers define an issue network on the Web as

"a heterogeneous set of entities (actors, documents, slogans, imagery) that have configured into a hyperlink

network around a common problematic, summed up in a keyword... Once such an issue network has been located on the Web... the network may provide clues as to the state of the issue, and the state of its public" (Marres and Rogers 2005: 927-928).

The issue, for our purposes, is Samsø, and performing hyperlink analysis is a way to look for connections between entities on the Web related to Samsø. As noted, I used the network analysis and visualisation tool IssueCrawler to locate this network. The IssueCrawler is a tightly designed tool with many built-in assumptions that might not all fit the objectives of this study, but at the time of writing it was a widely used tool for digital network analysis (for examples, see e.g. Marres and Rogers 2008, Bruns 2007, Maier et al. 2018, Chowdhury 2013). The IssueCrawler performs a co-link analysis to locate interconnected communities of web pages, starting from a series of URL starting points selected by the researcher. Choosing good starting points (e.g. websites which list thematically relevant hyperlinks) and filtering out non-issue specific sources which turn up in the initial network visualisations are essential for the location of issue networks. The starting points themselves are not automatically included in the visualisation; only websites acknowledged through a link from at least two of the original starting points are included in the issue network. The visualisation shows websites as nodes and hyperlinks as links between the nodes. The bigger the nodes, the more links do they receive from the network. Presenting one configuration among many possible, the shape of the network is informed by the starting points and will never provide a full or final depiction of a network.

The relations between the Web pages in issue networks are typically indirect, since "[a]cknowledgments of other sites, by way of hyperlinks, characteristically are one way recognitions" (Marres and Rogers 2005: 922). The nodes in the issue network need not link to each other in order to be included in the visualization; they must simply receive two links from the crawled population. Since Samsø is not an issue in

the sense of an object of debate and contestation, Samsø is perhaps best understood as a 'demonstrational object' assembling a network to support its message of the doability of sustainability and energy self-sufficiency. As for us, reading the networks surrounding Samsø will give us access to different renderings of Samsø's networks of influence. It will allow us to detect some of the networks in which Samsø circulates, and, perhaps, to see which versions of the Danish RE Island have made it into circulation among which entities.

The websites chosen as starting points for the IssueCrawler (see appendix 2) were derived from the Academy's website ([energiakademiet.dk](http://energiakademiet.dk)) which lists a number of collaborators and ongoing projects, EU projects primarily. With a long, updated list of hyperlinks, the website provided such a wealth of starting points that Google searches to detect Samsø collaborations and mentions, the outcome of which will always be on Google's conditions, could be avoided. This allowed us to maintain the 'web-vision' from the Energy Academy itself, thus achieving more of an 'insider's perspective' (Madsen 2012: 61). The resulting network is a snapshot of the Academy's 'work situation' at the time of writing (assuming that the website is regularly updated).

Importantly, to achieve a fine-grained understanding of the nodes and relations and make sense of the network visualisations, a qualitative inquiry into the substance of the websites was conducted, making the analysis a quali-quantitative endeavour (see Latour et al. 2012, Munk 2019).

Using the IssueCrawler software, I located a rather divided network space. The two clusters (one Danish and one European) in Figure 3 are spatially distinct from one another and connected only through the Energy Academy node in the map's center. The network is thus held together by [energiakademiet.dk](http://energiakademiet.dk), in accordance with the map's presentation of an 'ego perspective'.

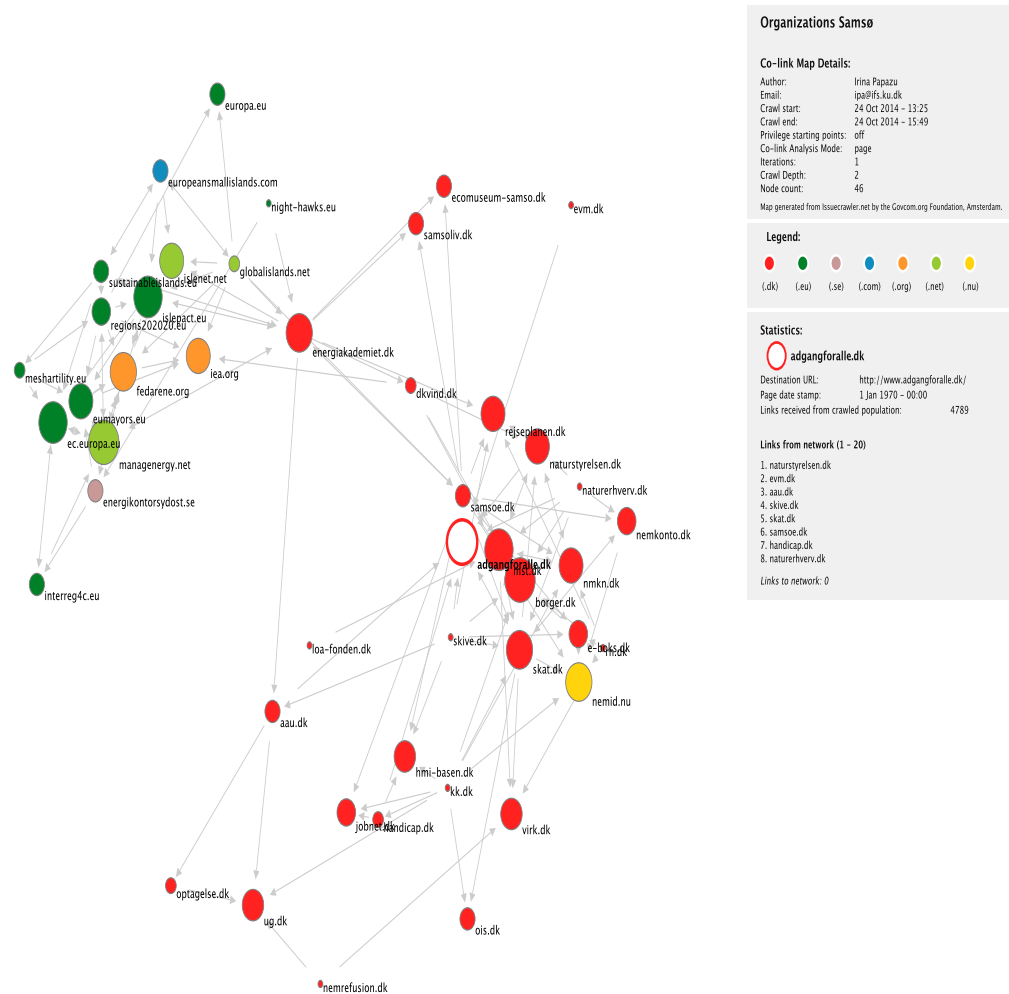


Figure 3: Samsø's organizational network on the Web, Fall 2014.  
 Source: *issuecrawler.net*, *Govcom.org Foundation*, Amsterdam.

As all the nodes on the left side of the cluster are active collaboration partners of the Energy Academy, this online network highlights that Samsø's networks are maintained through concrete, physical project work and reflects the Academy employees' actions. The networks are not based on *ideas*, not even on Samsø as the good example; these are networks assembled through *work*: through the Energy Academy's position as an active project organization with many partners.

The nodes in the top left cluster share a concern for islands. From *Islepac's* "sustainable energy actions for islands" to the *Global Islands Network's* "efforts to help ensure a healthy and productive future for islanders", the island condition – but not necessarily climate or energy – are the focus of these EU-based initiatives. Moving down the green EU cluster, the island element is mixed with energy and sustainability projects in which Samsø takes part, such as *Night Hawks* ("reducing night time energy waste"). This green focus is maintained when we move to the bottom half of the cluster where we find two well-known EU-based climate initiatives, the regional climate and energy project *ENERREG* and the *Covenant of Mayors*. Here we also find the *International Energy Agency* (IEA), the only international node in the network. While in the top-left corner Samsø figures as a working partner, toward the bottom we see Samsø being presented as an example rather than an active collaborator. This is especially notable in the case of the IEA, which lists Samsø as a 'case study' in the report "Citizens, Towns & Renewable Energy" (IEA 2009). In the EU zone, Samsø is creating waves both through the Academy's project work and by way of demonstration, as the Samsø case is employed to exemplify "a major transition of the energy sector" (IEA 2009: 3).

According to the red, loosely connected Danish cluster to the right in the visualisation, conversely, Samsø is not a role model, nor is the Academy an organization involved in projects. From this vantage point, Samsø is first and foremost a *place*. As this part of the network is not specific to Samsø's energy transition, if the visualisation had been made today, e.g. on the webcrawler *Hyphe* which allows for hands-on curation of the websites resulting from the web-crawl, the websites making up

this part of the network would probably have been removed manually as part of an initial qualitative reading of the crawled websites. The *Issuecrawler* does not have this level of sophistication, but perhaps this part of the network can still tell us something interesting about Samsø's role in the achieving local energy transitions in Denmark.

Present in the network are Samsø tourist center, some local sights, Samsø Municipality's website. A route planner also present in the network guides you there. Toward the center of this cluster is the *Danish Wind Association*, the only node in this network, apart from *energiakademiet.dk*, which directly engages questions of energy and sustainability. But a number of public organizations concerned with nature and the environment are present: *the Danish Nature Agency*, *the Danish AgriFish Agency*, *the Danish Environmental Protection Agency*. The presence of these institutions may be connected with the rules and regulations related to creating energy transitions in practice in Denmark. New RE technologies interfere with the environment, and environmental impact reports must be produced. Moreover, the network is dominated by Danish governmental institutions and especially by websites designed to connect citizens or organizations with the state: *nemkonto*, *nemid*, *e-boks* – sites for receiving digital mail from the authorities, paying taxes, auditing accounts. The network thus renders visible a certain type of work involved in being an active organization and community in Denmark, namely paperwork, bureaucracy and rule-following. This network is a window into Danish society in a more general sense. Here, Samsø will only become a notable object if it fails to abide by the rules of society. This network of normalcy highlights the ordinary politics involved in doing sustainability successfully. When an energy project is successful, it sinks into the taken for granted fabric of everyday life. The mark of success for an accomplished project appears to be whether it is considered mundane and goes unnoticed. By contrast, when Samsø is mobilised in other circles, it is performed as a fresh example to follow. But the closer we get to home, the less Samsø is noticed.

### *Samsø's Media Network*

In this last network we will see how the character of the network markedly changes when Samsø – and the Energy Academy's focus on sustainability – become so far removed from home that the island's success (rather than its affiliated actors' active presence) becomes a powerful tool of mobilisation in itself. In this online network (figure 4), all starting points are outsiders to Samsø. They are gathered from Google.com, Google.dk and Wikipedia.com; *delineation devices* that make available modes of seeing which do not necessarily offer reliable representations, but which fit well with our aim of achieving an outsider's perspective on Samsø (Madsen 2012), as Google orchestrates most people's access to the Web. Having retrieved links to news stories from the Wikipedia.com entry for Samsø, which is central because it represents many outsiders' first encounter with the Danish Energy Island, I searched Google for further news stories with the queries "Samsø renewable energy" and "Samsø vedvarende energi". I examined the first ten Google result pages for the Danish and international searches, including as starting points only websites reporting on Samsø from a distance and excluding pages that seemed to have direct, non press-related contact with the island, in pursuit of an outsider's perspective in contrast to the network in Figure 3 (see appendix 3).

The resulting map of linked Web pages is a rather loosely clustered network heavily dominated by American news media and organizations. The UN, the IPCC (the Intergovernmental Panel on Climate Change) and Greenpeace at the center of the network are the only international nodes. The Energy Academy itself has assumed a peripheral position in the bottom-right corner, and the UK and Canada are each represented by one newspaper, the Guardian and the Globe, respectively. What sets this network apart from the organizational network above is, firstly, the fusion of mainstream and critical news media and organizations, and, secondly, the network's overall focus on climate change over energy. As described above, all crawled websites were visited and analyzed qualitatively, and their specificity to the Samsø case – provided that



the Energy Academy or the Renewable Energy Island project were mentioned – was evaluated.

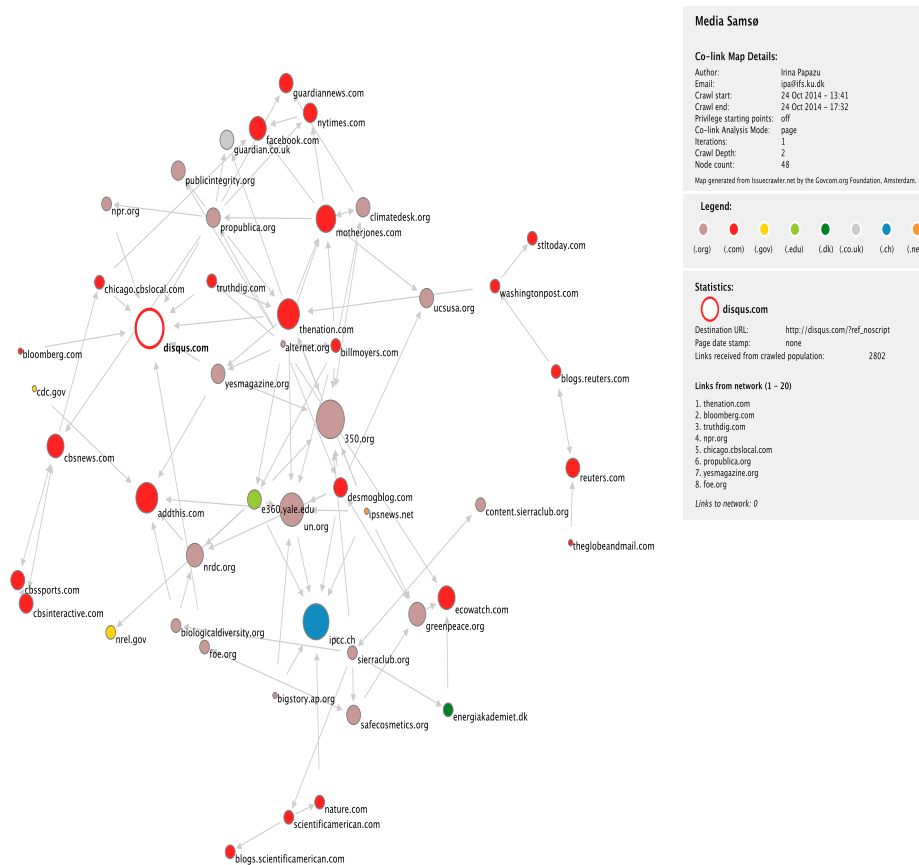


Figure 4: Samsø’s media network on the Web, Fall 2014.  
Source: *issuecrawler.net*, Govcom.org Foundation, Amsterdam. Samsø,

On the left side of the map we find British and American mainstream media such as *the Guardian*, *the New York Times*, *NPR* and *CBS*. These have all reported on Samsø, mostly articles which tell some version of the well-known story of how Samsø became Denmark’s Renewable

Energy Island. The latest *New York Times* story, however, stands out by being an on-the-spot report from the People’s Climate March in New York, September 2014. In the article, connections are made between The Climate March and Samsø as the journalist runs into students planning a visit to the island: “A group... has headed... to Denmark along with two faculty members and five residents of Maine’s many small islands grappling with high energy costs from reliance on diesel generators... the college president told me their goal... is to devise a plan for Maine’s islands to follow the example of Samsø, a Danish island that was once dependent on diesel fuel but now is a net exporter of fossil-fuel-free electricity to the mainland.” (*New York Times* 2014). Samsø becomes implicated in global climate activism through its power as an exemplar (and by a chance encounter in Manhattan). While the IPCC and UN nodes would likely be central in any climate-oriented network, when they appear in this context it might be for more Samsø-specific reasons since, according to the American view of Samsø, the island represents a significant *climate*-related endeavour (remember how the EU-centered map above focused on questions of renewable energy and sustainability in general but less on climate change as such).

In the US, climate science was still contested when this analysis was conducted (see e.g. Goldenberg 2016), and this is reflected in the structure of the network containing activist and left-leaning nodes such as *Mother Jones*, *Alternet.org* and *The Nation*. Among these critical American news sources we find free press and independent science organizations, such as the *Union of Concerned Scientists* (*ucsusa.org*). Most of these pages do not deal with Samsø directly but with the issue of climate change, the shared concern of this network. This network map, more so than the previous one, displays the characteristics of a typical issue network, with different aspects of an issue being articulated and disagreements coming to light. Samsø is enrolled into this network as an example of an alternative vision mobilized against the so-called climate skeptics. Rather than Samsø being the center of engagement in itself, Samsø becomes another argument in a tense debate.

Samsø is not usually treated as a contested or questionable object



in itself, and for the most part, this network takes Samsø's success as a given. The network does, however, provide access to one debate surrounding Samsø, which played out in *The Scientific American*. In 2010, the journal published a long, uncritical article about Samsø. The first comment below the article links to a 2007 article in *The Australian Business Review* named "When the wind doesn't blow, power doesn't flow even in Denmark". The comment sparks a long debate of more than fifty comments with several participants arguing for and against Samsø's accomplishment, concluding with this last comment: "Well, I see that this article hasn't received the warmest of receptions, but at least the Danes are actually trying things." Quite a step down for "the world's most inspiring renewable energy-powered island", as formulated in another article located through the network visualization (Ecowatch 2014). Such contestations are, however, rare, and Samsø's movements in the US- and climate change-dominated media zone appear to continue undisturbed. The network provides access to articles from the early 00's as well as to articles and blog posts from last week. Not only is the view of Samsø's accomplishments predominantly positive, but Samsø is still considered relevant by its spectators.

Although these three maps and the PowerPoint presentation bring different versions of Samsø's networked practices and movements, the RE Island rarely figures as a disputed object. Samsø plays a different role from one context to another: in one network it is evoked as a model community in terms of public participation, in another as an example of carbon neutrality or rural development, and in the Danish context as nothing out of the ordinary. However variable its definition, it seems that across these various contexts Samsø consistently displays feasibility, demonstrating that a more sustainable society could be within reach.

## Conclusion

Throughout the analysis I have attempted to illuminate how Denmark's Renewable Energy Island Samsø has managed to travel 'across scales,

sites, and practices' (Wahlberg 2022) and traverse multiple zones, geographic as well as thematic, on and off the Web, to become the successful demonstration island it has become. Combining a Web-based quali-quantitative approach with ethnographic fieldwork has allowed for a flexible investigation of the heterogeneous ways in which demonstration projects can gain influence through networking practices and assert themselves as 'success stories' for diverse audiences to learn from and invest in. This assemblage ethnographic approach has made Samsø's network activities and politics visible. While the online issue network mapping gives a sense of different zones of influence, the examples from the field, especially the PowerPoint presentation, allow for an appreciation of the importance of contextuality and the manipulability of the reality the spokespeople of the demonstration project wish to convey. Together they bring to the fore the fact that which type of network is the salient form of organization for Samsø depends on time and place, and I have argued that this variability – 'Samsø's' ability to circulate network-specific versions of itself, adjusted to specific sites – is one of its strengths as a demonstration project.

The various networking practices that Samsø engages in display their own politics. The US-dominated media network in figure 4 displays a politics of issuefication (Marres and Rogers 2005), turning Samsø into a counterargument to be mobilized against climate skeptics. The director's handmade map of the world shows Samsø's conscious strategy of diversification, of adjusting to different contexts to make itself relevant world-wide. Samsø's organizational network, displaying an EU and a Danish cluster, demonstrates Samsø's profile as an example to be followed, learned from, collaborated with; but at the same time as just another place in Denmark. The PowerPoint presentation, lastly, turned witnesses into network participants through its manipulating moves.

Being a Renewable Energy Island created to produce similar effects in other places takes work. Becoming energy self-sufficient by investing in wind turbines and building district heating plants, creating citizen groups and arranging public meetings is just the first step, the foundation of the net-work that follows. During fieldwork, I frequently encountered

'networks' in conversation, presentations and practice. Networking, understood as "practices that circulate information, people and things" (Marres and Rogers 2008: 253), offers a way to modify size and escape the boundaries of place, create zones of relevance and change horizons. In the field of environmental change, most influential examples and solutions on display are local; they are instances of success limited in scope and scale. International schemes and agreements, as we were recently once again reminded with the 28<sup>th</sup> COP meeting under the UNFCCC in Dubai, have yet to prove themselves efficient at achieving necessary carbon reductions and putting an end to the fossil economy. While policy makers nationally and internationally struggle to come up with large-scale solutions to tackle a changing climate and a fossil fuel-based world economy, successful examples out there, however small in scale, are mobilized to communicate that sustainability may be doable after all. However mundane, a successful RE Island challenges through its very example the fossil fuel-based economy by suggesting to policy makers and others that *it may be otherwise* (Star 1988), thus carrying with it a radical political potential for change.

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## Appendix 1

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The Australian Business Review. 2007, "When the Wind Doesn't Blow, Power Doesn't Flow Even in Denmark." Retrieved 28 april, 2015 (<http://www.theaustralian.com.au/business/opinion/when-the-wind-doesnt-blow-power-doesnt-flow-even-in-denmark/story-e6frg9k6-1111114580943?nk=edbbd24ece-47b82783a11553147000bb>)

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## Appendix 2

*Samsø organizational network: Starting points for the IssueCrawler*

The Energy Academy:

<http://www.energitjenesten.dk/>

<http://energiakademiet.dk/viden/>

[www.energiinstitutet.dk](http://www.energiinstitutet.dk)

Implement - EU project (and project partners):

<http://peopleandbiogas.com/baggrund/>

<http://www.innovatum.se/>

<http://www.ipark.no/ipark>

<http://www.samsoe.dk/site.aspx?LangRef=1>

<http://www.time.kommune.no/kart/>

<http://www.trollhattanenergi.se/om-oss/>

<http://www.lemvig.dk/>

<http://www.fyrbodal.se/2.52a880561341fd21f7380008686.html>

<http://www.greengascluster.com/>

Night Hawks - EU project:

<http://www.night-hawks.eu/>

<http://www.prioriterre.org/>

<http://www.severnwyte.org.uk/>

<http://www.ekodoma.lv/index.php?lang=en>

<http://stratagem.com.cy/partners.html>

<http://www.saena.de/>

<http://www.craca.it/homeEN.aspx?lang=EN>

Smilegov - EU project:

<http://www.sustainableislands.eu/partners.html>

<http://www.dafni.net.gr/en/>

<http://www.gotland.se/>

<http://www.oland.se/olandskommunalforbund/>

<http://www.visitestonia.com/en/holiday-destinations/the-islands/saaremaa-island>

<http://europeansmallislands.com/>

<http://www.itccanarias.org/web/>

<http://www.aream.pt/>

<http://www.cea.org.cy/CEA%20English/Links.html>

<http://www.lca.org.mt/pages/iseMain.asp>

D2D - EU project:

<http://www.wisle.org/people>

<http://www.shetland.gov.uk/>

<http://www.en.aau.dk/>

<http://www.inselundhalligkonferenz.de/>

<http://www.lunduniversity.lu.se/>

<http://www.fryslan.nl/>

<http://www.tudelft.nl/en/business/research-projects/>

<http://www.epea.com/en/content/links>

<http://arkitema.dk/presse/#/>

<http://www.texel.nl/>

<http://www.planenergi.dk/>

<http://www.brk.dk/Sider/Forside.aspx>

<http://www.laesoe.dk/default.asp?PageID=81>

<http://aeroekommune.dk/>

<http://www.danske-smaaoer.dk/links>

Organizations mentioned on the Energy Academy website:



<http://www.ve.dk/vedvarendeenergis-samarbejdsprojekter>

<http://www.ictsd.org/bridges-news/biores/overview>

<http://www.seagency.dk/projects.html>

<http://stateofgreen.com/en>

<http://www.shelburnefarms.org/>

<http://www.ecday.eu/news/>

<http://www.aarhus2017.dk/sponsorer-0>

<http://masdecoracion.latercera.com/>

<http://www.arte.tv/de>

<http://ruab.org/>

### Appendix 3

*Samsø media network: Starting points for the IssueCrawler*

News media links on the Wikipedia.com page "Samsø":

[http://en.wikipedia.org/wiki/Samsø#Renewable\\_energy](http://en.wikipedia.org/wiki/Samsø#Renewable_energy)

<http://content.time.com/time/magazine/article/0,9171,1883373,00.html>

<http://www.newyorker.com/magazine/2008/07/07/the-island-in-the-wind?currentPage=all>

<http://www.metaefficient.com/renewable-power/danish-island-is-energy-self-sufficient.html>

<http://www.cbsnews.com/news/danish-island-is-energy-self-sufficient/>

Google.com: "Samsø renewable energy island"

<http://www.scientificamerican.com/article/samsø-attempts-100-percent-renewable-power/>

<http://ecowatch.com/2014/05/01/samsø-renewable-energy-island-sustainable-communities/>

[http://www.huffingtonpost.com/stefanie-penn-spear/samsø-worlds-first-100-re\\_b\\_5303237.html](http://www.huffingtonpost.com/stefanie-penn-spear/samsø-worlds-first-100-re_b_5303237.html)

<http://www.go100percent.org/cms/index.php?id=58>

<http://earthtechling.com/2014/09/students-study-renewable-energy-on-denmarks-island-of-samsø/>

<http://www.nextworldtv.com/videos/energy/samsø--the-renewable-energy-island-of-denmark.html>

<http://www.pbs.org/wnet/need-to-know/environment/an-island-without-oil/1328/>

<http://climateheroes.org/support-us/>

<http://www.nationofchange.org/samsø-world-s-first-100-percent-renewable-energy-powered-island-beacon-sustainable-communities-13990>

<http://www.csmonitor.com/Business/The-Bite/2014/0705/Samsø-s-farmers-move-toward-organic-farming-and-away-from-fossil-fuels>

<http://www.wintergreencoop.com/samsø-island/>

<http://www.care2.com/news/member/354341191/3766494>

<http://lawweb.colorado.edu/events/details.jsp?id=5130>

<http://europeupclose.com/article/samsø-island-denmark-living-the-green-dream/>

<http://theenergylibrary.com/node/601>

<http://www.euronews.com/2012/06/05/samsø-where-renewable-energy-rules-the-roost/>

<http://www.independent.co.uk/environment/climate-change/the-little-island-and-its-big-green-victory-1827638.html>

<http://www.occupy.com/article/danish-island-powered-renewables-creating-followers-worldwide>

<http://news.greenmountainpower.com/manual-releases/2014/Montpelier-announces-a-renewable-energy-future?feed=d51ec270-a483-4f6c-a55e-8e5f8e2238c2>

<http://www.grundfos.com/about-us/how-we-think-and-act/small-island-goes-green.html>

<http://www.greenenergytimes.net/2013/12/15/samsø-island-is-100-renewable/>

<http://pennsylvaniafrack.com/2014/09/24/students-study-renewable-energy-on-denmarks-island-of-samsø/>

<http://www.spiegel.de/international/europe/an-ecotopia-for-climate-protection-samsø-island-is-face-of-danish-green-revolution-a-656325.html>

[http://mitsloanblog.typepad.com/mit\\_clean\\_energy/2011/03/sams%C3%B8-a-renewable-energy-island.html](http://mitsloanblog.typepad.com/mit_clean_energy/2011/03/sams%C3%B8-a-renewable-energy-island.html)

<http://www.theguardian.com/environment/2008/sep/21/renewableenergy.alternativeenergy>

[http://www.smartgridnews.com/artman/publish/Technologies\\_DG\\_Renewables/Sams---Denmark-s-renewable-energy-island-3775.html](http://www.smartgridnews.com/artman/publish/Technologies_DG_Renewables/Sams---Denmark-s-renewable-energy-island-3775.html)

<http://www.justmeans.com/blogs/the-island-of-social-innovation-samsø>

<http://www.norwegian.com/magazine/features/2013/04/is-this-the-most-eco-friendly-island-on-earth>

<http://www.sierraclub.org/sierra/green-life/2014/03/4-worlds-most-sustainable-islands>

<https://www.mum.edu/samsø-worlds-first-100-renewable-energy-powered-island/>

<http://news.coa.edu/2014/10/16/soren-hermansen-of-samsø-energy-academy-to-visit-coa-campus/>

<http://www.workingwaterfront.com/articles/Modern-day-Vikings-meet-Maine-island-delegation-in-Samsø-Island-Denmark/16139>

<http://ecowatch.com/2014/10/23/samsø-island-renewable-energy/>

Google.dk: Danish results ("Samsø vedvarende energi")

<http://denkorteavis.dk/2012/6844/>

<http://politiken.dk/klima/ECE2087817/kaffedrikkeri-har-gjort-samsø-til-verdensberømt-klimaduks/>

<http://www.information.dk/470180>

<http://ing.dk/artikel/ildsjæl-fra-samsø-far-miljøets-nobelpris-99661>

<http://aarhusstift.dk/2014/03/studietur-til-samsø-med-groenkirke/>

<http://www.djoefbladet.dk/blad/2010/21/nyt-job-s-oe-ren-stensgaard.aspx>

<http://www.information.dk/126394>

<http://www.jyllands-posten.dk/protected/premium/erhverv/ECE3508997/samsø-bliver-energi-oe/>

<http://www.csr.dk/sams%C3%B8-har-luft-under-vingerne>

<https://www.realdaniadebat.dk/landbrugsforum/pages/VedvarendemedvindoverSams%C3%B8.aspx>

<http://radikaleaarhus.dk/samsø-har-noget-at-vaere-stolt-af/>

<http://rethinkbusiness.dk/c/blog/pumper-og-cirkulaer-oekonomi-i-samsø-kommune>

<http://www.golf.dk/content/samsø-ser-groent>

<http://www.business.dk/oekonomi/samsø-skal-vaere-groent-mod-elsamfund>