

SHAREPOINT



The project Wind2050 may revolutionize citizen involvement in renewable energy.

The Danish Council for Strategic Research is supporting the Wind2050 project to the tune of DKK 20 million. This is a significant sum which reflects the fact that the links, which the project assures between innovative IT tools, financial models and sociological analyses have the potential to generate a radical change in the way major energy projects are planned and anchored in a democracy.

Wind2050 is an independent research project funded by the Danish Council for Strategic Research
The project runs from 2014 to 2017.

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NEWS All

14 January 2016
Research School 22-26 August 2016

14 January 2016
Wind2050 conference on 26 August 2016

14 January 2016
Wind2050 Seminar 2 February 2016

30 October 2015
Invitation to join Interec application, BALTECO

NEWS LETTER (in Danish)

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Progress Report for Wind2050

2016

Sagsnr. 1305-00021B.

Kristian Borch, Michael Søgaard Jørgensen, Helle Tegner Anker, Niels-Erik Clausen, Jacob Ladenburg, Michael Minter

Status and progress / Status og fremdrift af projektet

Management

Generally the project is progressing in accordance to the plan, and the scientific output in terms of published publications is very satisfying.

The project results have been presented at several conferences at WP level, and in addition the project manager Kristian Borch has represented the project at Seminar on Danish Experiences with Wind Energy and Community Engagement On June 8th in Dublin. The seminar was held in joint cooperation with Embassy of Denmark in Dublin, Ireland and Sustainable Energy Authority Ireland (SEAI).

The planned 1 week research school was launched late August in connection with the half yearly project meeting and Scientific Advisory Panel consultation. 20 participants 6 PhD's, 5 postdocs, 2 master students and 7 scientists from different disciplines attended the course. Please see course description at the end of this report. The SAP panel was satisfied with the scientific publication pipeline and advised the project to focus on reaching out to the projects stakeholders i.e. municipalities, developers and politicians on both national and local levels.

WP1: Mapping and analyzing co-shaping of wind power facilities (DTU, AAU, QUB)

A fact sheet systematically describing 39 cases of wind turbine activities from municipality planning to sitings of on-shore and off-shore wind turbines has been developed. The objective is to constantly update the information on the sitings with new insights from our research to inspire additional analysis from the perspectives of the other work packages.

Controversy mapping based on Facebook groups' activities, homepages, public hearings and local press coverage of wind turbine developments:

The objective has been to better understand how narratives of wind turbines are developing and spreading. Initial findings indicate that very few "super spreaders" (individuals who are very active in discourses in relation to several sitings) can be identified, although their impact is not necessarily very significant in shaping the discourse. Moreover, we have systematically mapped issues of concern in tangible and intangible categories, and the preliminary analysis shows that in sitings with a high level of conflict also has a significantly higher occurrence of in-tangible concerns.

Dialogue research in relation to specific municipalities and wind turbine projects

Long-term case studies of their wind power planning has been developed with City of Aarhus, 9 municipalities in Region Southern Denmark, and a project in the Northern part of Jutland. Data collection has been carried out through dialogue meetings, interviews and participant observation. WP1 was especially focusing on approaches to public participation and on characterisation of different municipal approaches to local wind turbine planning: reduction of annoyances, local contribution to national energy transition and local economic development through wind turbines. Together with WP2 and WP3, WP1 is developing a STS-based approach to analysis and dialogue about local wind turbine projects based on Actor-Network Theory (ANT), political ecology and place attachment theory. The approach is also applied when exploring possibilities for action research and/or dialogue research.

Publications:

Borch, K., Nyborg, S., Clausen, L.T., Jørgensen, M.S.: Wind2050 – a transdisciplinary research partnership about wind energy in: Holstenkamp, L., Radtke, J. (eds.) Handbook on Energy Transition and Participation, Springer Verlag, Chapter 47 (in press)

Munk, A. K. (2014) Mapping wind energy controversies online introduction to methods and datasets, Working paper, Department of Learning and Philosophy, Aalborg University

Conference abstracts.

Jørgensen, M.S., Borch, K., Nyborg, S., Clausen, L.T.: Political ecology as perspective in analyses of crises in sustainable transition: on-shore wind power in a front runner country. Abstract for 7th International Sustainability Transitions (IST) Conference 2016, Exploring Transition Research as Transformative Science - September 6 – 9 2016, Wuppertal, Germany

Nyborg, S., Clausen, L. T., Kirkegaard, J. K., Rudolph, D. P., Jørgensen, M. S.: Social contention in Denmark over alternative wind power development paths. Abstract for 4S/EASST conference, August 31-September 3, 2016, Barcelona, Spain

WP2: Local acceptance and public regulation (UCPH, UCL, QUB)

In WP2 the data collection in the case studies has now been carried out. This includes qualitative data on planning and participation processes (Laura Tolnov Clausen: Hvide Sande, Nørhede-Hjortmose, Nørrekær Enge) and on compensation schemes (Marie Leer Jørgensen: Nørhede-Hjortmose, Trikelshøj, Rødby Fjord). Furthermore, a UK case study has been carried out (Julia Tomei: Big Field, Cornwall). The data is currently being analysed and draft articles being prepared.

In general, the preliminary results indicate that several factors influence the issue of local acceptance. As regards planning and participation processes an overall observation is that citizens do not experience the planning process as democratic and inclusive - an experience expressed through a distrust of the municipality and the developers and an experience of opaque and inadequate involvement. In this respect the distrust is not so much whether municipalities meet the formal requirements for the planning process (they do probably). It is rather the process itself, which is not experienced as sufficient. As regards the compensation schemes the preliminary results indicate that the schemes do not necessarily meet the desired outcome of increasing local acceptance and that there are some concerns as regards distributive as well as procedural fairness. Furthermore, an explorative study on early involvement in landscape analysis at strategic planning level (municipal plans) in Guldborgsund has been carried out (Søren Præstholm/Vibeke Nellemann) with some interesting results. An analysis of strategic municipal planning has also been carried out (Helle T. Anker/Tine Reimer) showing that several municipalities have become more reluctant to adopt strategic plans (designation potential wind turbine areas) and that alternative methods are being developed for the designation of potential sites (top-down v bottom-up). In addition interviews have been made with local politicians and planners (Tove Enggrob Boon/Tine Reimer) identifying different perceptions and types of local democracy: system democracy, business democracy, community democracy and grassroot democracy. On the UK part of the project an article by Chiara Armeni on participation in environmental decision-making based has been accepted for publication in Journal for Environmental Law. The article suggests that the participatory orientation of mitigation measures within planning law should be acknowledged and strengthened, while the potential for community benefits to constitute alternative fora for community participation should be explored. A comparative article (UK-DK) on the linkages between public participation and administrative appeals is being elaborated by Chiara Armeni and Helle T. Anker.

Publications - selected:

- Anker, H.T. & Jørgensen, M.L., 2015, Mapping of Legal Framework for siting of wind turbines – Denmark, IFRO Report, http://curis.ku.dk/ws/files/143884872/IFRO_report_239.pdf
- Anker, H.T., 2016, Notat om kommunal planlægning for vindmøller
- Armeni, C., 2016 Public participation in wind energy infrastructure in England and Wales, Journal of Environmental Law (in print)

- Boon, T.E. & Reimer, T. 2015. Blæst om demokratiet. Momentum 4:23-31

WP3: Local acceptance and private project development practices (DTU, KORA, RPS, DWIA)

Data collection

We have conducted interviews with 8 developers in Denmark, and with planners and politicians in 21 Danish Municipalities. The planning of interviews in connection with establishment of a UK/Irish reference study is in progress. The interviews will be conducted in the period mid November to mid December 2016.

A methodology has been developed to analyse public engagement practice from developers in construction and infrastructure projects. We are in contact with three construction companies to explore specific public engagement challenges and best practices. The interviews will be conducted and analysed in the next months.

Significant findings

- The fierce competition for land
- The role of landowners in a local society and the perceived unfairness of some receiving significant economic benefit and leading to controversies
- The diversity of developers; owner schemes and business models
- The large diversity in how developers work with Municipalities – the planning authority
- Some developers work inside the designated “wind areas” assigned in the strategic planning process; others work “all over the place”
- Confusion over the perceived role of the municipalities: designating areas for wind turbines can make them appear that they are acting like (or on behalf of) developers
- The phrase “paradigm shift” is used by the developers themselves (= from coop to international and commercial business)

Challenges

- New tendering scheme in Denmark is to be introduced February 2018, but as yet there is no political decision as to the format of the scheme, leading to increased uncertainty
- Near-shore bidding process with significant political uncertainty
- The ongoing health impact study by the Cancer Society has put some activities on hold, until the results are published.

Publication

Kvalitativ analyse af opfattelsen af planprocessen for vindmøller på land hos kommunalpolitikere og kommunalt ansatte, der har ansvar for vindmølleplanlægning. Interviews i 21 kommuner. VidenOmVind, august 2016. by Henrik Vinther.

WP4: Acceptance preferences and their consequences for cost-efficient wind deployment (KORA & DTU)

Status for the WP is that we more or less have gathered all relevant data. The data includes; near shore/offshore cost data, acceptance cost for offshore, nearshore and onshore development, data on mitigating acceptances cost such as short/long term job creation in coastal areas, the possibility to buy shares in wind farms. In addition, we have data on how detailed information related to the choice of developing nearshore relatively to offshore influences acceptance costs. That said, one of the main challenges has been getting cost data on offshore/near shore investments and generation. The costs estimates are essential in the WP in order estimate cost curves and the identification of potential optimal offshore/near shore strategies.

Publications

One book chapter

- Ladenburg, Jacob (2016): Acceptance of Wind Power. An Introduction to Drivers and Solutions. In: *Alternative Energy and Shale Gas Encyclopedia*, Eds. Jay H. Lehr & Jack Keeley. John Wiley & Sons, Wiley Series on Energy, pp. 3-9.

Three accepted per-reviewed articles

- Jacob Ladenburg (2015): Does more wind energy influence the choice of development location ? Assessing the cumulative effects of wind turbine encounters in Denmark. *Energy Research & Social Science*. 10: 26-30.
- Knapp, Lauren and Jacob Ladenburg (2015): Spatial relationships and economic preferences for wind power – a review, *Energies*, 8(6):6177-6201.
- Ladenburg, Jacob (2014): Dynamic properties of the preferences for renewable energy sources - a wind power experience-based approach. *Energy*, 76:542-551

One article in IAEE energy forum

- Henrik Klinge Jacobsen, Pablo Hevia-Koch and Christoph Wolter (2016) Nearshore Versus Offshore: Comparative Cost and Competitive Advantages. *IAEE Energy Forum (Bergen Special 2016)*, 17-19.

In addition, app. 10 conference presentations have been given and several master students have been involved in the process of obtaining and analysing data.

WP5: Comprehensive recommendations and scenario analysis of wind power by 2050 (DTU, QUB)

So far progress in WP5 is represented by the work of PhD student Celine Bout. Celine has performed a review on international Energy Modelling work and its impact on National Energy Action Plans (NEAP).

- Bout C. Exploring the range of data inclusion by energy scenarios for Denmark, Ireland and UK since the EU 2009 Renewable Energy Directive – focus on the wind energy sector DTU – Abstract for Scenario conference at Warwick University – October 2015
- Bout C. and Kristian Borch IST Conference Wuppertal – September 2016 All things considered? – A review of long term energy planning models applied in Ireland, UK and Denmark. Conference Wuppertal – September 2016
- Bout, C. Review of long-term energy planning in Ireland, UK and Denmark Abstract for EASST Conference – September 2016

WP 6: Knowledge sharing and dissemination of results to end users

Status and progress

So far we've published three Wind2050-newsletters. The first edition, published in May 2015, contained a general introduction to the project and short articles on all workshops and project publications so far. The second edition, published in December 2015, covered the latest publications, the project meeting in August 2015 and press coverage of the project. The third edition, published in June 2016, covered the latest publications and informed about the upcoming Wind2050-seminar.

Planned next steps / Planlagte næste skridt

Management

Focus will be on disseminating project results to the project key stakeholders in form of policy briefs, a concluding report and a conference in collaboration with Danish Wind Industry Association (DWIA), Local Government Denmark (KL) and CONCITO.

Work Package 1

The focus in the coming period will be finalisation of dialogue research with a number of on-going wind turbine projects and writing of peer reviewed articles based on conference abstracts as well as policy briefs.

Work Package 2

The future work in the WP will focus on data analysis and writing articles and policy briefs.

Work package 3

The future work in the WP will focus on data analysis and writing articles and policy briefs.

Work package 4

The future work in the WP will focus on data analysis and writing articles and policy briefs.

Work Package 5

We will develop a number of qualitative scenarios of strategies to reach future targets of 2020 and 2050 energy targets and simulate these quantitatively. The approach is based on a combination of scenario analysis and discrete-event computer simulation with which the strategies can be continuously developed.

Work Package 6

As the project develops and more findings and conclusions appear, we expect an increased communication activity in autumn 2016. This includes publication of 1-2 more newsletters: One after the seminar in August and – if relevant – one by the end of the year. We will also increase efforts to get more media attention to the findings of the project. Press releases will be publicized when relevant.



RESEARCH SCHOOL 22-25 August 2016 University of Copenhagen, Faculty of Science

Creating legitimacy in wind turbine planning

Wind power is increasingly considered essential in countries' transition towards a fossil independent energy system. However, siting of wind turbines has proven to be a challenging endeavor for planners and developers, not taking into account that national level aims do not always go hand in hand with local level realities. This course focuses on the challenges in siting of wind turbines. Taking different theoretical perspectives, the course provides frameworks to analyze both the processes behind and the results from previous wind turbine projects and policies, so as to make it possible to recommend new planning and development procedures including citizen engagement, non-economic incentives, and regulatory framework. The course draws on the experiences from the research project WIND2050 (chaired by the Technical University, Denmark), and is conducted in a collaboration with the involved partners.

Time: 22-25 August 2016

Place: University of Copenhagen, Frederiksberg Campus, Room: A2-.70.01 Thorvaldsensvej 40

Education: PhD & Post doc

Learning outcome: The aim of the course is to present PhD students with selected theories and analytical frameworks with which to analyse wind turbine planning and better understand the controversies behind wind turbine planning and ways to resolve them.

Literature: The course will be based on scientific articles and key references related to environmental psychology, behavioural economics, law and environmental justice, democracy theory and controversy mapping, applied to the case of wind turbine planning.

Teaching and learning methods: The course consists of lectures, real life cases, exercises, students' colloquia and excursion (Wednesday afternoon). Prior to the course, PhD students prepare and hand in by 15th August a short abstract (max. ½ page) related to one or more of the themes of the course (i.e. conflict management, environmental psychology, democratic participation, social learning, environmental economics, legal issues or environmental justice) and linked to their own PhD study. After the course a short reflection paper (max. 3 pages) shall be handed in for assessment by 10th September at the latest. Post docs and others wishing to have their project discussed are also invited to submit an abstract by 15th August.

Fee: A fee of 1500 DKK is charged to cover food expenses, inclusive of dinner Thursday evening. A reduced fee of 1.000 DKK is charged if you do not participate in the dinner – please let us know if you will not participate in the dinner Thursday evening.

Sign up: Charlotte Bukdahl Jacobsen: cja@ifro.ku.dk **no later than 12. August 2016.**

Credit: 3 ECTS

Exam:

Type of assessment: Handing in written assignment and active participation in the course

Aid: all aids allowed.

Marking scale: Passed/Failed

Censorship form: No external censorship, internal examiners

Criteria for exam assessment: See criteria for Learning outcome

Workload:	hours	(1 ECTS = 27.467 hour)
<i>Lectures:</i>	16	
<i>Colloquia:</i>	16	
<i>Theory exercises:</i>	8	
<i>Preparation:</i>	42.4	
Total	82.4	(= 3 ECTS)

Detailed programme

Monday 22/8 2016

8.30-9.00: Registration and coffee/tea

Acceptance of wind power – conflict management and an environmental psychology perspective

Using cases on controversies from wind turbine planning we will discuss the dynamics of controversy and how conflicts may be alleviated through different non-economic incentives and stronger involvement of the public.

Responsible: Jens Emborg & Kristian Borch

9.00-9.45 What is conflict? We take departure in peoples own conflicts and controversy in an attempt to define what conflict is and how it impact our lives, Kristian Borch

9.45-10.00 Break

10.00-10.45 Conflicts and their escalations: A brief introduction to the dynamics of conflicts and four dimensions, Kristian Borch

10.45-11.00 Break

11.00-12.00 Applying the theory on own cases and on selected wind turbine cases.

12.00-13.00 Lunch

13.00-13.45 The progress triangle: A number of issues about managing conflicts can be portrayed as a triangle of three interrelated dimensions; namely substance, procedure, and relationship, Jens Emborg

13.45-14.00 Break

14.00-15.30 The Unifying Negotiation Framework: The framework is an integrative model of policy negotiation based on the discourse tradition in public policy and political theory, Jens Emborg

15.30-15.40 Break

15.40-16.15 Discussion on how the introduced tools and frameworks can support a benign development of wind power.

References:

Daniels, S.E., G.B. Walker, and J. Emborg, 2012. The Unifying Negotiation Framework: A model of policy discourse. *Conflict Resolution Quarterly*, 30(1), 1-14.

Hahn, R., 2008. Preventing Conflicts by Application of Psychology in Spiess, W., & Felding, F. *Conflict prevention in project management : strategies, methods, checklists and case studies*, Springer. Pp 41-61.

Jolivet, E., & Heiskanen, E. 2010. Blowing against the wind-An exploratory application of actor network theory to the analysis of local controversies and participation processes in wind energy. *Energy Policy*, 38(11), 6746–6754

Supplementary references:

Daniels, S.E. and Walker, G.B., 2001. Working Through Environmental Conflict: The Collaborative Learning Approach. Westport, CT: Praeger. 299 pp (Chapter 3 plus selected sections)

Vindeløv, V. 2012. Reflexive Mediation, Chapter 4. Conflicts and their escalation, pp. 57-86. DJØF Publishing.

Tuesday 23/8 2016

Democratic participation, social learning and political space in (wind power) planning

The aim of the day is to discuss different forms of democracy and participatory approaches, including procedural (legitimacy) and substantial (social learning) arguments. Moreover, we will discuss whether it is possible to reach consensus on siting of wind turbines or whether we should embrace antagonism as a social attribute for the potential change.

Responsible: Laura Tolnov Clausen & Mikaela Vasstrøm

Guest speaker: Geraint Ellis (GE) on Political space: consensus-dissensus and deliberative practice

Dr. Geraint Ellis is a Professor in the School of Planning, Architecture and Civil Engineering (SPACE) and Director of Research for the Institute of Environmental and Spatial Planning (ISEP) at Queen's University, Belfast. His key research interests are in planning and sustainability, renewable energy, planning governance and healthy urban planning. He has published and researched widely on these issues, recently co-editing a book on Learning from Wind Power: Governance, Society and Policy Perspectives on Sustainable Energy.

9.00-10.15: Forms of democracy. Types of deliberative democratic thinking. Participation in planning, procedural (legitimacy) and substantial (social learning) arguments, Laura Tolnov Clausen & Mikaela Vasstrøm

10.15-10.45 Questions and discussion in plenum

10.45-11.00 Break

11.00-12.00 Political space: consensus, agonisms and republicanism, Geraint Ellis

12.00-12.30 Questions and discussion in plenum

12.30-13.30 Lunch

13.30-15.30 Colloquium. PhD groups: Each PhD-student presents their research (5 min.), reflect how the core issues of the day relate to their research (5 min) and discuss with these reflections in the group (10 min.). The group makes a list of main discussion points to present in plenum

15.30-16.00 Plenum. Presentations of colloquium discussions from each group (app. 10 min. each group)

References:

Arnstein, Sherry: A Ladder of Citizen Participation. Journal of the American Institute of Planners, Volume 35, Issue 4, 1969, p. 216-224

Barry, John & Ellis, Geraint (2010) Beyond Consensus? Agonism, Republicanism and a Low Carbon Future. In Devine-Wright, Patrick (Ed.) Renewable Energy and the Public. From Nimby to Participation, (pp. 29-43). Oxon/New York: Earthscan.

Healey, Patsy 2003: Collaborative Planning in Perspective, Planning Theory, 2 (101), 101-123

Nielsen, K. A. and Nielsen, B. S. (2006). Methodologies in action research: Action Research and Critical Thinking. In L. Svensson and K. A. Nielsen (Eds.). Action and Interactive Research: Beyond Theory and Practice, (pp.63-87). Maastricht: Shaker Publishing..

Supplementary references:

Cunningham, F. 2002. Theories of Democracy: A Critical Introduction. Routledge Contemporary Political Philosophy.

Friedmann, J. (1987) Planning in the Public Domain: From Knowledge to Action. Princeton, NJ: Princeton University Press.

Ellis, G., Barry, J. and Robinson, C., 2007. Many ways to say 'no', different ways to say 'yes': applying Q-methodology to understand public acceptance of wind farm proposals. *Journal of Environmental Planning and Management*, 50(4), pp.517-551.

Wednesday 24/8 2016

Eliciting preferences for wind power development, guidelines, caveats and central points for policy relevance

The aim of the day is to give an introduction to environmental economics and then focus on wind turbines effect on house prices and spatial properties of preferences for wind power and acceptance cost .

Responsible: Jacob Ladenburg.

9.00-9.45 Introduction to environmental economics, Pablo Hevia Koch

9.45-10.30 Wind turbines effect on house prices, Toke Emil Panduro

10.30-10.45 Break

10.45-11.30 Spatial properties of preferences for wind power and acceptance costs, Jacob Ladenburg

11.30-13.00 Plenary discussion

13.00-14.00 Lunch

14.00-18.00 Excursion to Middelgrunden offshore turbines

References:

Knapp, L. and J. Ladenburg 2015. "Spatial Relationships and Economic Preferences for Wind Power-A Review." *Energies* 8(6): 6177-6201.

Ladenburg, J. and S. Lutzeyer 2012. "The economics of visual disamenity reductions of offshore wind farms—Review and suggestions from an emerging field." *Renewable and Sustainable Energy Reviews* 16(9): 6793-6802.

Menegaki, A. 2008. "Valuation for renewable energy: A comparative review." *Renewable and Sustainable Energy Reviews* 12(9): 2422-2437.

Jensen, C.U., Panduro, T.E. and T.H. Lundhede 2014. "The vindication of Don Quixote: The impact of noise and visual pollution from wind turbines." *Land Economics* 90(4): 668-682.

Thursday 25/8 2016

Legal issues, compensation schemes and environmental justice

The aim of the day is to focus on the legal framework for wind energy installations as well as on the use of different types of financial compensation schemes, e.g. co-ownership and community benefit schemes. Furthermore, issues of environmental justice will be presented and discussed.

Responsible: Helle Tegner Anker

Guest speaker: Gordon Walker.

Professor Gordon Walker is currently focusing predominantly on questions of energy demand in his new role as Co-Director of the RCUK funded DEMAND Centre (Dynamics of Energy, Mobility and Demand). The DEMAND Centre takes a distinctive approach to end use energy demand, recognising that energy is not used for its own sake but as part of accomplishing social practices at home, at work and in moving around. Considering wind power Gordon has strong research interests in the social dimensions of sustainable energy technologies and public engagement with community energy projects.

9.00-10.15 Introduction to law and legal approaches to address citizen concerns, including planning and EIA procedures as well as compensation schemes, Helle Tegner Anker

- 10.15-10.30 Questions**
- 10.30-10.45 Break**
- 10.45-11.45 Environmental and energy justice: concepts, concerns and complications in relation to wind energy development, Gordon Walker**
- 11.45-12.30 Questions followed by plenary discussion on linkages between legal approaches and environmental justice**
- 12.30-13.30 Lunch**
- 13.30-15.00 Colloquium. Project presentations and group discussions on the projects and identification of “main points of the day”.**
- 15.00-15.45 Plenum – group presentations (“main points of the day”)**
- 15.45-16.00 Course evaluation**

References:

- Olsen BE, Anker HT. 2014. Local acceptance and the legal framework: the Danish wind energy case. In: Squintani L., Vedder H., Reese M., Vanheusden B. (eds.) 2014. Sustainable energy united in diversity: challenges and approaches in energy transition in the European Union. Vol. 1. European Environmental Law Forum. Pp. 137-156. (European Environmental Law Forum Book Series, Vol. 1).
- Gross C. 2007. Community perspectives of wind energy in Australia: The application of a justice and community fairness framework to increase social acceptance. *Energy Policy* 35 pp. 2727-2736
- Cass N, Walker G, Devine-Wright D. 2010. Good neighbours, public relations and bribes: The politics and perceptions of community benefit provision in renewable energy development in the UK. *Journal of Environmental Policy & Planning* 12:3 pp. 255-275
- Simcock, N. 2014. Exploring how stakeholders in two community wind projects use a “those affected” principle to evaluate the fairness of each project’s spatial boundary. *Local Environment* 19:3 pp. 245-258

Supplementary references:

- Wolsink, M. 2005. Wind power implementation: The nature of public attitudes: Equity and fairness instead of ‘backyard motives’. *Renewable and Sustainable Energy Reviews* 11 pp. 1188-1207
- Walker, G. 2012. *Environmental Justice. Concepts, evidence and politics.* Routledge, London.

Thursday Evening 25/8 2016

Evening dinner for PhD course participants and WIND 2050 meeting attendants