OPIN Webinar: Public acceptance of offshore renewables

16th November 2021

Interreg North-West Europe OPIN

European Regional Development Fund

Welcome

- Attendees' microphones will be muted during the event.
- After the presentations there will be a Q&A session.
- Questions can be formulated in the Q&A window at any time. Please send your questions to the host and all panellists and specify, in the text, to whom this question is for.
- The event will be recorded and shared on the OPIN website.

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Agenda (GMT)

14:00 – 14:10 Introduction to webinar and the OPIN project
Solène Goy - SEAI

14:10 – 14:25 Ocean energy – in harmony with local communities and environments
Lotta Pirttimaa - Ocean Energy Europe

14:25 – 14:40 Stakeholder engagement and community benefits
Garry Keegan - Infrastructure Projects Consulting

14:40 – 14:55 Public perception of offshore wind farms in Ireland
Yvonne Cronin – DP Energy

14:55 – 15:10 The importance of social acceptance in developing the Igiugig Hydrokinetic Project
Brendan Cahill – ORPC Ireland

15:10 – 15:25 The Block Island (USA) offshore wind power project
Jeremy Firestone - University of Delaware

15:25 – 15:45 Q&A

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OPIN Introduction

Solène Goy - SEAI

Interreg North-West Europe
OPIN
European Regional Development Fund
EUROPEAN UNION

What is OPIN ?

Ocean Power Innovation Network (OPIN)
is a **European collaborative network**

OPIN Aim:

- Develop both cross-regional and cross-sectoral **collaboration**

OPIN Target:

- In-depth support to over 100 companies
- Develop a self-sustaining network (>200 members)

From 2019 to 2022.

2.6M€ total project budget
1.5M€ in financial support from Interreg North West Europe

Join the network (free)

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Who are OPIN ?

7 partners from Ireland, UK, Belgium, France, the Netherlands and Germany

Project Partners	Countries/Regions
Sustainable Energy Authority of Ireland (SEAI)	Ireland
Scottish Enterprise (SE)	Scotland
Offshore Renewable Energy Catapult (OREC)	United Kingdom
Sirris, het collectief centrum van de technologische industrie (SIRRIS)	Belgium
West Atlantic Marine Energy Community, École Centrale de Nantes (WEAMEC)	France Pays de la Loire
Dutch Marine Energy Centre (DMEC)	Netherlands
Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V. (Fraunhofer IEE)	Germany

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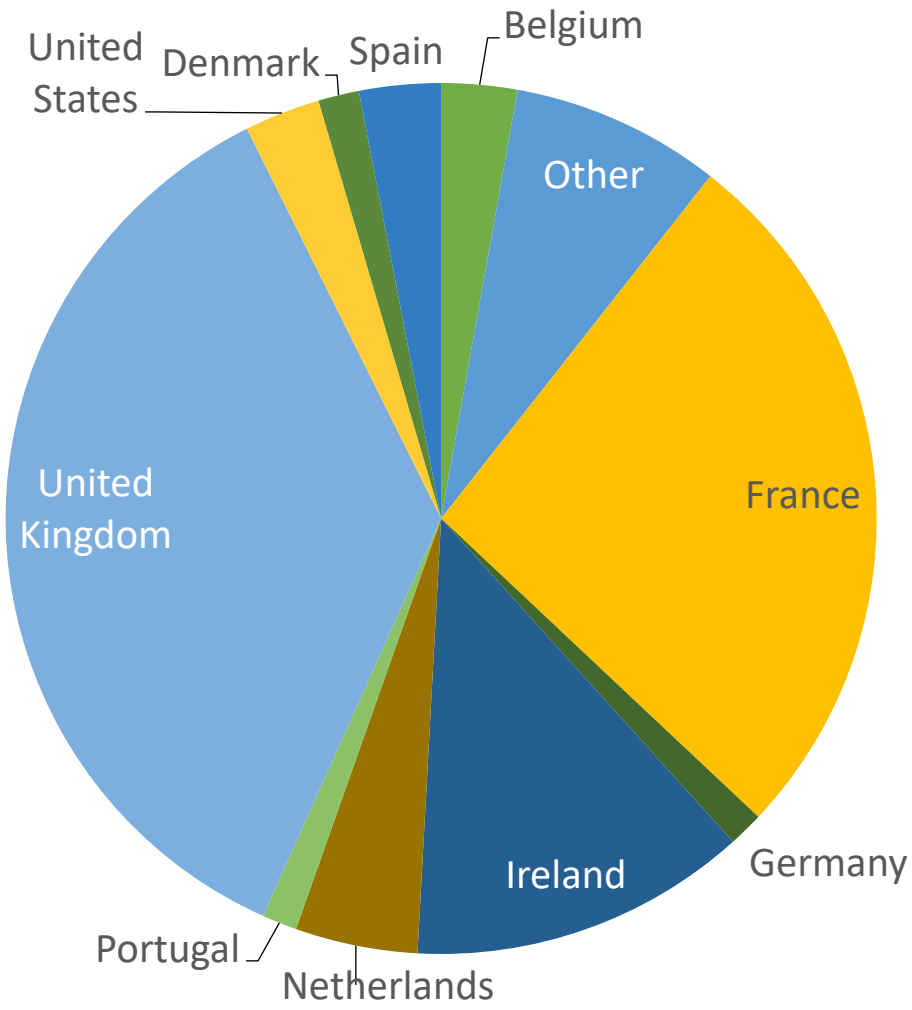
OPIN Members



462 members from 31 countries

Link to Members list

What can OPIN do for you (1/2)

Access **free events**: learning and networking opportunities.

- Masterclass: Corrosion solutions for offshore renewable energy devices (2nd Dec 2021)

More events will be announced soon for 2022 on our Events page

What can OPIN do for you (2/2)

Access **expert advice** on your technology (TAPs)

- ✓ Independent expert opinion – e.g., on the route to market, on reducing development risks and costs, etc.
- ✓ Advice on next steps, funding and collaboration opportunities

Support **collaborative projects** (CIGs)

- ✓ Preparatory step to National and EU research calls
- ✓ Find ways to solve technical or financial problems you are facing
- ✓ Expand your network nationally and internationally
- ✓ Benefit from the experience of those in other industries

Receive **travel support**

- ✓ Enabling Irish and Scottish Enterprise SMEs to travel abroad for OPIN events

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OPIN Resources

OPIN Members list

OPIN Library:

- Workshops/masterclasses presentations
- Value chain study - summary report
- Ocean energy challenges and recommendations: Desktop analysis of studies and reports

OPIN Twitter and LinkedIn groups. Join us for the latest updates!

Email us at: OPIN@seai.ie

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Ocean energy – in harmony with local communities and environments

Lotta Pirttimaa - Ocean Energy Europe

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Ocean Energy Europe

oceanenergy.eu

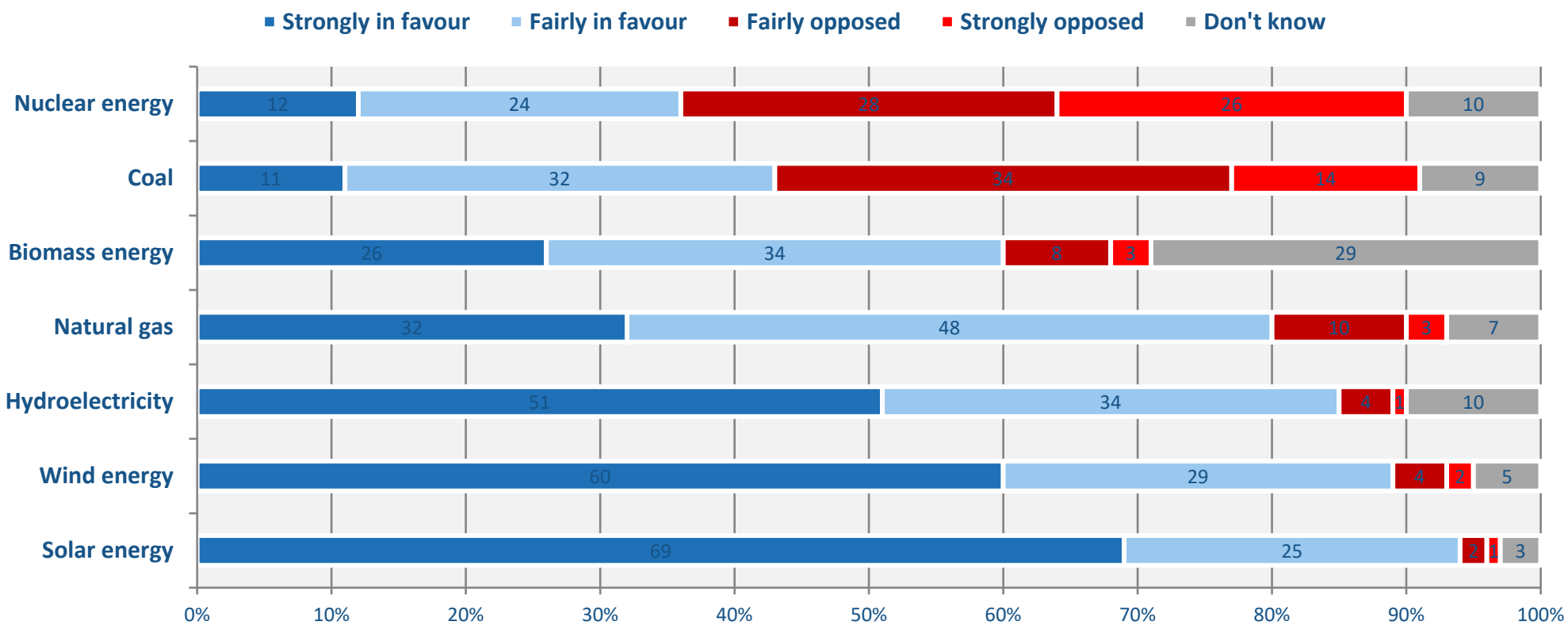
Ocean energy – in harmony with local communities and environments

Lotta Pirttimaa, Policy & Project Officer, Ocean Energy Europe

Ocean Energy Europe

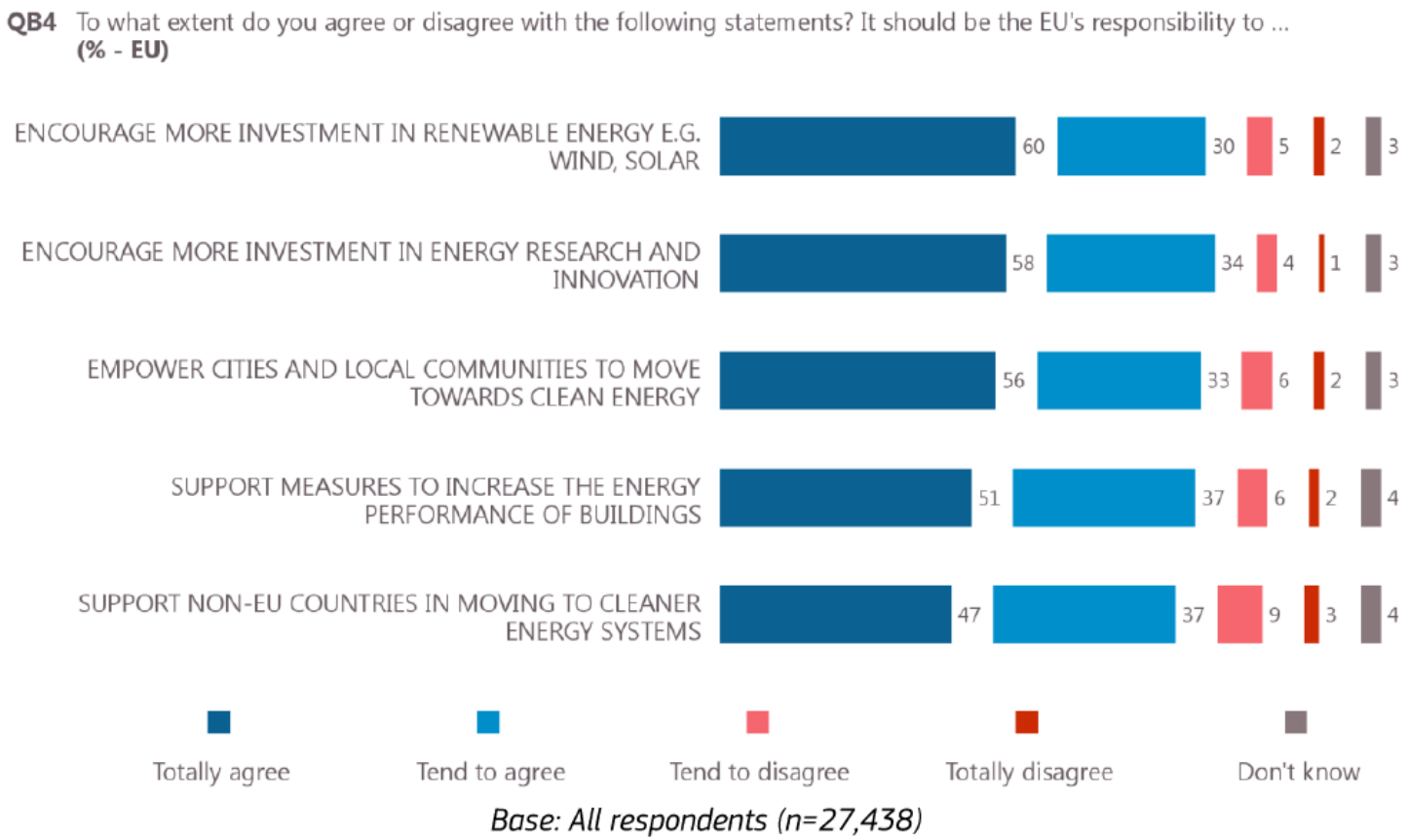
- 120 members
- Lead partners:

To what extent are you in favour or opposed to the use of the following sources of energy in your country?



Source: Eurobarometer 364/2011 Public Awareness and Acceptance of CO2 capture and storage

90% of EU citizen support more renewables



Source: Eurobarometer 492/2019 EU Energy Policy

Two golden rules to increase acceptance

GIVE & GATHER information:

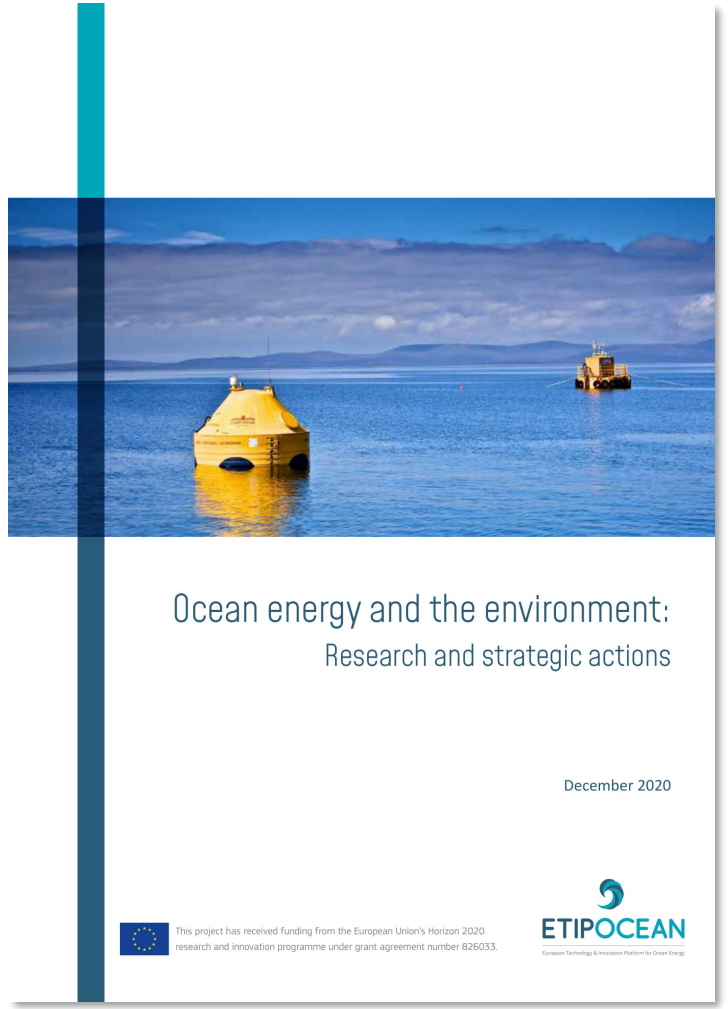
- Lack of knowledge creates concerns
  - Explain what you do & what the impacts are
- Lack of control creates resistance
  - Include the community to your planning

Share information & reduce environmental concerns

- Environmental concerns are of particular concern to local people
  - Wave and tidal technologies are new & unfamiliar to people
- Understanding the impacts are low will reduce concerns & increase acceptance

Explain in a way that is easy to understand

- Collisions have never happened
- Marine animals avoid the devices
- Noise is lower than ambient noise
- Devices can create artificial reefs and marine reserves



Engage with locals & accelerate consenting

- Continuous engagement
  - Include the public in consultations from the start & until the end
- Local support accelerates consenting
  - Increases regulators' trust

Raise awareness and harness local knowledge

- Communicate the impacts and benefits of the project
- Listen to their concerns and knowledge of the local environment
- Include all relevant stakeholders, not just the key players
- Be present in the community and meet them in real life

Conclusion: Give & gather info to increase acceptance

- Raise awareness and share knowledge
  - Benefits of ocean energy & your project
  - Impacts on the environment, local economy, stakeholders…
- Engage with the local community
  - Consult all stakeholders
  - Listen to their opinions & advice

Ocean Energy Europe

oceanenergy.eu

Stay tuned!

@EuropeanOceanEnergyAssociation

@OceanEnergyEU

european-ocean-energy-association

@oceanenergyeurope

Stakeholder engagement and community benefits

Garry Keegan - Infrastructure Projects Consulting

Interreg North-West Europe OPIN

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European Regional Development Fund

OPIN Webinar 16th November 2021:

Public Acceptance of Offshore Renewables

Stakeholder Engagement & Community Benefits

by

Dr. Garry M. Keegan

IPC / IEA Wind Task 28

Introduction / Background

Recent Publication

Stakeholder Engagement

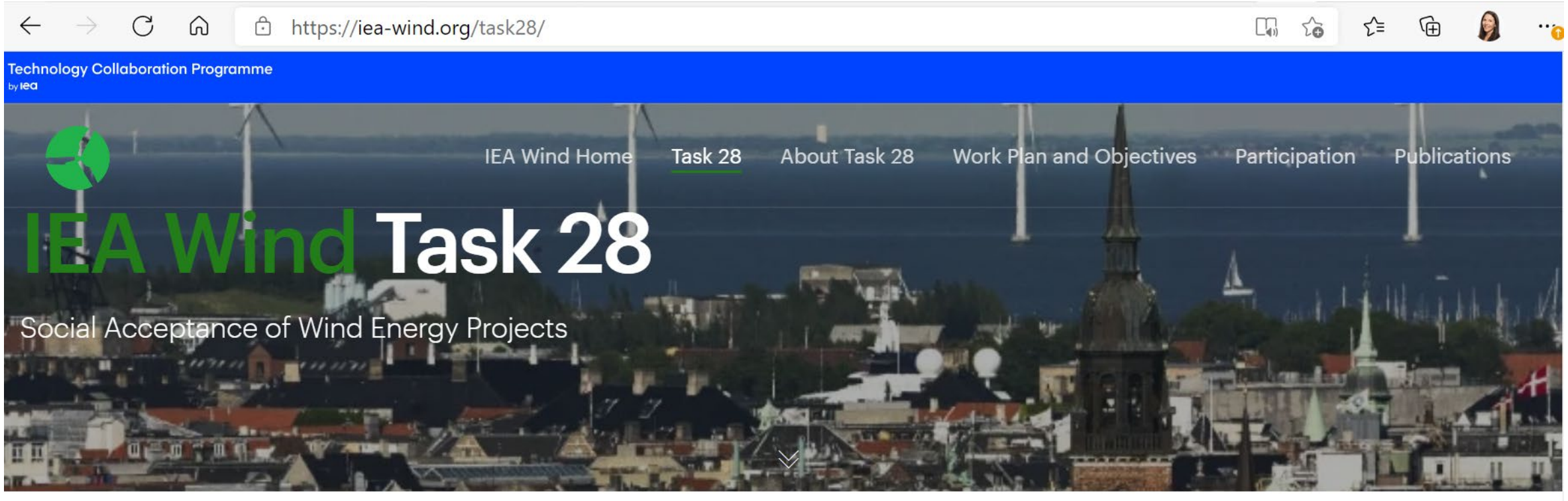
Community Benefit Schemes

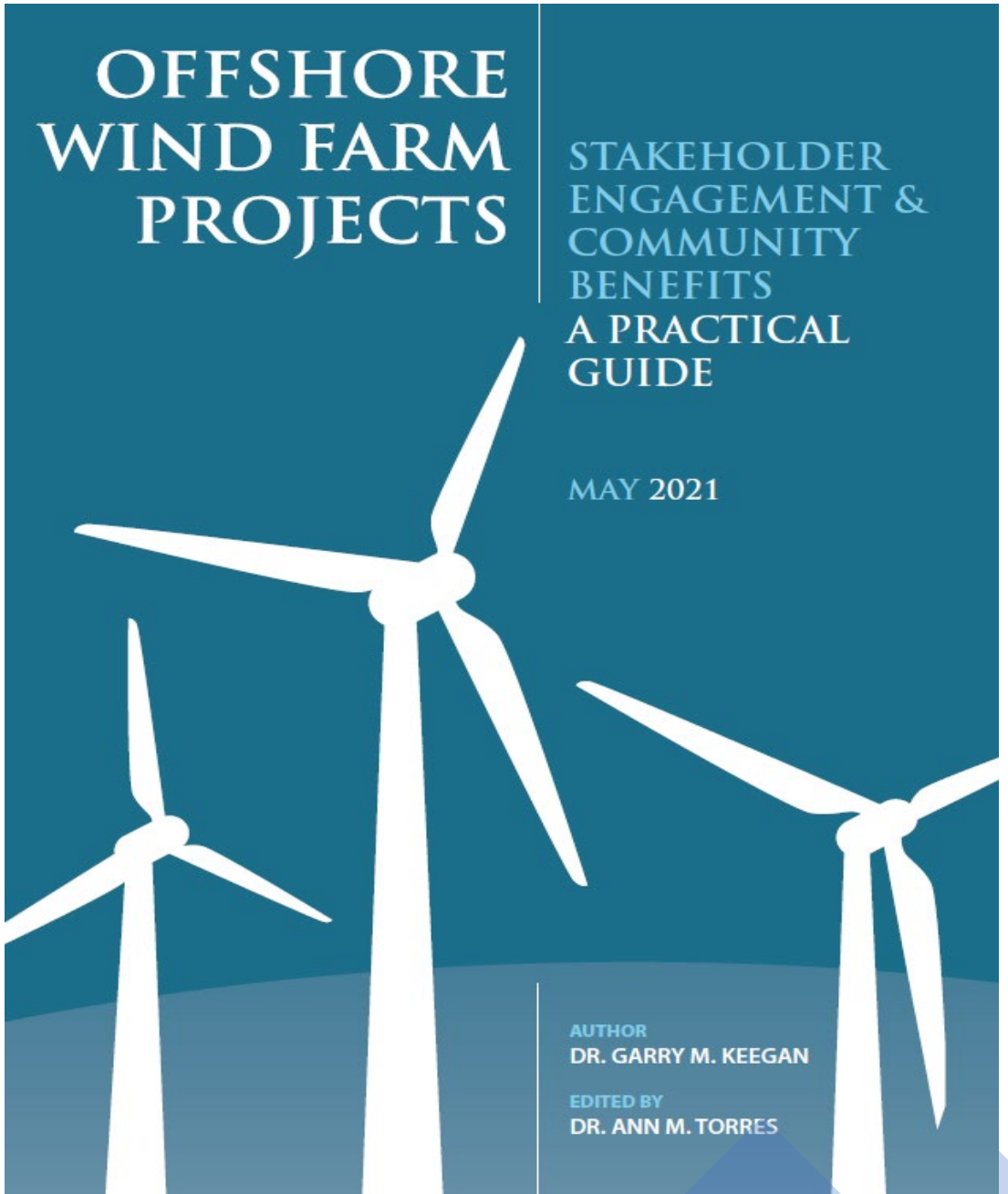
Next steps, opportunities for involvement

Questions

The new web platform
[IEA Wind TCP (iea-wind.org)]

[Task 28 | IEA Wind TCP (iea-wind.org)]





This project has been supported with financial contribution from Sustainable Energy Authority of Ireland under the SEAI Research, Development & Demonstration Funding Programme 2019, Grant number 19/RDD/554.

Stakeholder Engagement

Depending on national legislation, some countries have official stakeholder lists, which distinguish between statutory and non-statutory stakeholders.

Regardless of whether a certain stakeholder group is on an official regulatory list, it is advisable to engage with all identified stakeholders, even beyond legal obligations.

Most stakeholders, individuals, and special interest groups and organisations (statutory and non-statutory) will have concerns legitimate to them, some will be articulated by professional consultants, which will form submissions as part of the consenting process.

Stakeholder Engagement

Stakeholders need to be identified and consulted, early and throughout the project.

Developers, through industry representative structures, should be obliged and/or guided to undertake wide-ranging and flexible community engagement methods to facilitate ongoing dialogue.

Clear guidelines or a Code of Conduct for community engagement, tailored to the local context, would facilitate this dialogue.

Local Stakeholder Groups	Examples
Residential	• Coastal and port communities • Resident cooperatives and associations • Community societies • Neighbourhood security, community watch
Community Influencers	• Local opinion leaders • Large employers • Elected public representatives • Local, municipal, regional, state, and national broadcast and print media • Social media interests • Celebrities
Economic Groups	• Local retail • Chambers of commerce • Service and manufacturing businesses • Commercial fisherman • Shipping companies • Employment unions • Telecommunications companies • Tourism industry providers • Hospitality and accommodation providers
Authorities	• Military and defence ministry • Airport authorities • Aviation companies • Air rescue • Marine management services • Catchment management authorities • Local government • Local networks e.g., public participation networks, community fora • Tourism agencies • Indigenous People and their representatives
Other Groups	• Religious groups • Sport clubs • Leisure boating clubs, boating and yachting associations • Sea scouts • Environmental, nature and conservation groups • Bird watching groups • Walking and hiking clubs • Special interest groups (e.g., Bathymetry)

Community Benefit Schemes

Community benefit schemes are now a feature of international infrastructure development.

In the context of wind farm projects, developers provide funds to communities living in close proximity to their project and local benefits can be in the form of new community facilities or environmental enhancement.

An important feature of community benefit schemes is that they are viewed and administered as distinct from traditional economic benefits (e.g., local supply chain, employment), though, there are complementary synergies.

Community Benefit Schemes

Each scheme will vary depending on the developer, the local communities, and the project itself.

To achieve the most effective impact, schemes should reflect and respond to local needs.

Each scheme should be tailored to reflect the characteristics of the development and the local social and economic environment.

Factors to consider in designing a community benefit scheme are the:

- Scale of project
- Technology
- Distance of project from shore
- Proximity to local port and coastalcommunities
- Nature of project (i.e., trial or actual site for an offshore wind farm)

Community benefits are intended as a tool to share the benefits of a natural resource in recognition of project impacts.

Governance and Administration

It is vital that a governance and administration structure is selected on a site-by-site basis.

Below are some questions which could be a starting point for discussion. It will be prudent

for communities to seek professional advice to ensure funds are administered correctly and

accountably. Developers may wish to support this process.

Community Capacity • Is the recipient group adequately resourced to deliver the scheme

and Resource

Fund Scale • Where large sums will be paid annually, does the recipient group have the confidence and experience to manage and distribute funds effectively?

Fund Structure • Will regular meetings be required?

• Is there an open application process which will require detailed

assessment from a panel?

• Are there set criteria which will require minimal input?

• Have any potential conflicts of interest been identified?

• Will a portion of the fund be ring-fenced for particular stakeholders such as the local commercial fishing fleet or tourism association?

Enterprise Ireland, stage agency, has set up an Irish Supply Chain Cluster with currently features 60 companies (consultancy, R&D, engineering, specialist geotechnical and environmental) – Ireland developing a clear supply chain strategy. – Carbon Trust UK are advising.

Similarly, in France a group of marine companies and unions has launched a new supply chain cluster for the offshore wind sector.

Scottish Unions want to speed up requalification of former oil and gas workers for renewables and support hiring more female and ethnically diverse recruits – called Climate Skills Scotland.

UK Offshore Wind Manufacturing Investment Support Scheme (UK Gov Phase 2 = £160m fund)

Supply Chain

Local, Regional, National

Other considerations and helpful information:

- Benefits of Offshore Wind
- Perceived Drawbacks
- Offshore Vs. On-shore Community Acceptance
- and Stakeholder Engagement Differences 12
- Capacity Building
- Offshore Wind Farm Neighbours
- Visual Impact
- Tourism Impact
- Political and Community Assessment

- Stakeholders Involved in Offshore Zoning
- and Site Selection Considerations

- References
- Additional Sources and Useful Links

Next steps, opportunities for involvement

- 2nd ed.: international case study based, interested in visiting offshore locations and local stakeholder groups
- Always research collaboration requests
- IEA Wind (Exco) & Task 28

gmk@ipc10.com

Questions?

Thank you.

Public perception of offshore wind farms in Ireland

Yvonne Cronin – DP Energy

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DP ENERGY

Yvonne Cronin
Community and Stakeholder Liaison Manager

Public Perception of Offshore Wind Farms in Ireland

November 2021

Who are DP Energy?

- Irish based renewable energy developer, head-quartered in Buttevant, Co. Cork.
- Established over 30 years ago, early 90s.
- Developing globally – Australia, United Kingdom, Canada and Ireland.
- Onshore Wind, Solar, Tidal, Offshore.
- Sustainable Developments.

EirWind

Aim: To conduct multidisciplinary research into development pathways (a Blueprint) for offshore wind in Ireland

WP2 Data Management for Site Evaluation

WP6 Research Synthesis: EirWind Blueprint

WP3 Development Optimisation for Cost Reduction

WP5 Markets Infrastructures, Storage and Economic Benefits

WP4 Governance and Biology

Project Duration: 1st August 2018 to 31st July 2020

DP ENERGY

Four main pillars of Study of the WP4 Governance and Biology Study in EirWind

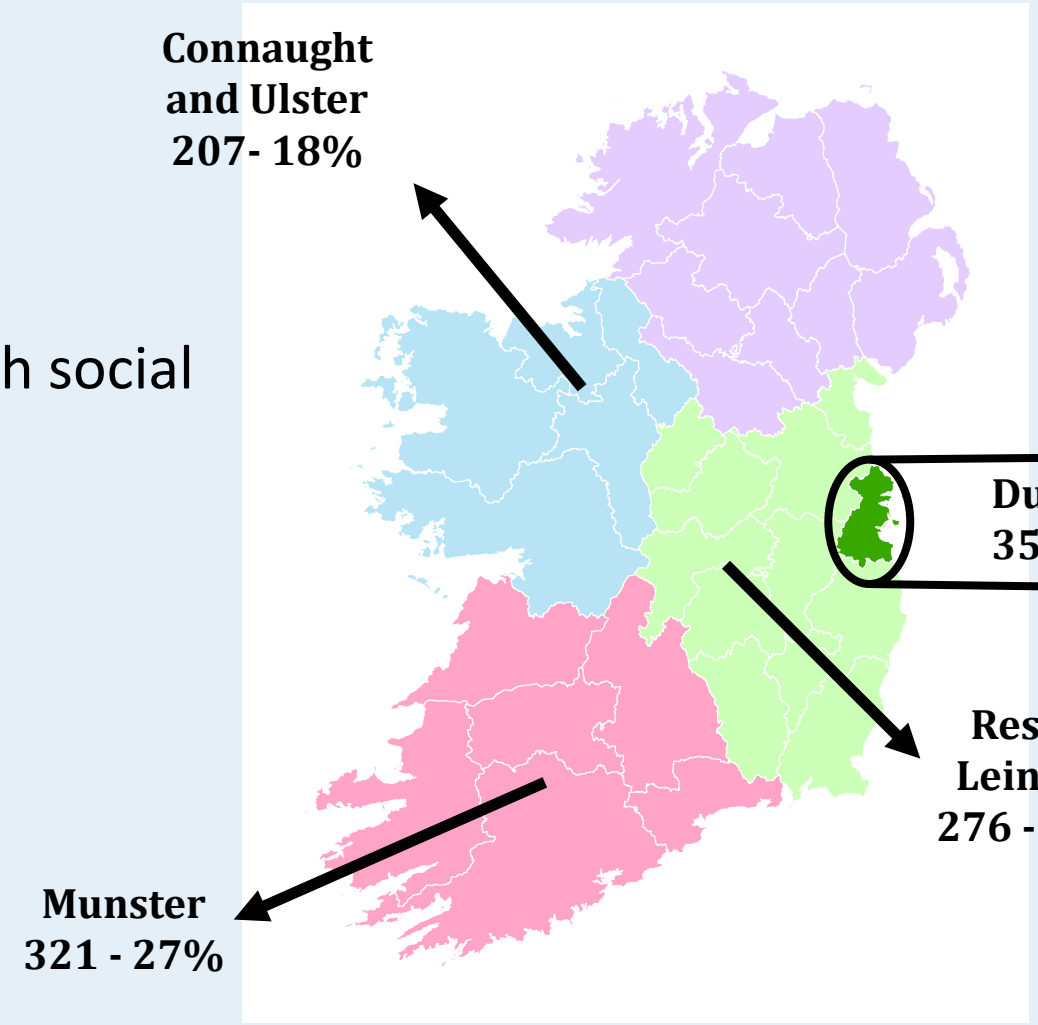
1. Legal and Policy Review
2. Socio Economic Study
3. Social Licence to Operate – Fishers
4. Social Licence to Operate – Public Perception

The Aim – What is the current mindset of the Irish General Public with regard to offshore wind farm development?

1. What experience has the Irish public had with offshore wind farms to date?
2. How do people feel about energy security?
3. Do people relate wind energy to the challenge of climate change?
4. Do people think the government should support the development of offshore wind, and how?
5. How do people feel about specific issues of concern such as job creation, effects on wildlife and visual impact?
6. Would people be inclined to object to the development of offshore wind farms in their area and why?

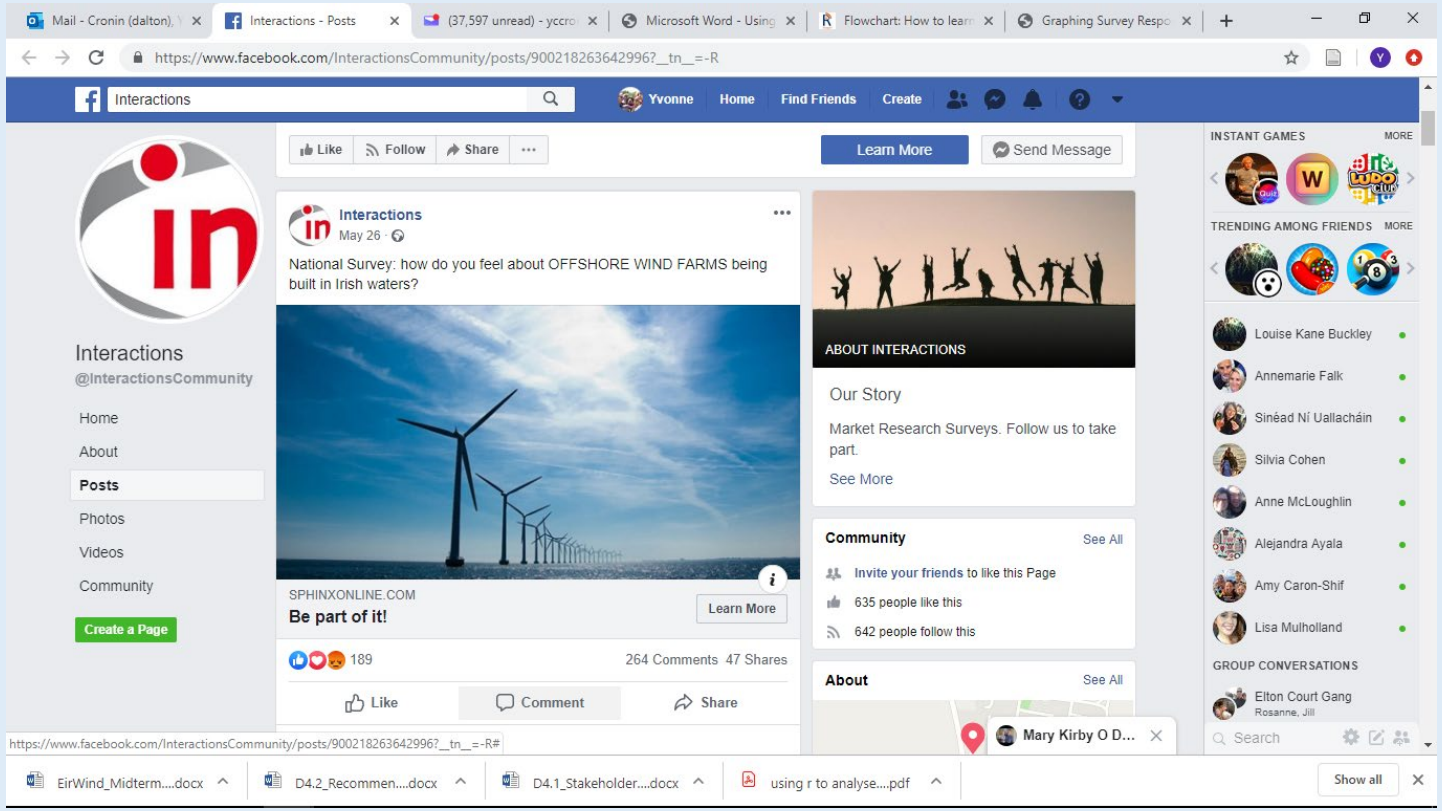
Survey Responses

- Nationally representative
  - Geographically targeted through social media
- Statistically Robust
  - 1154 useable responses

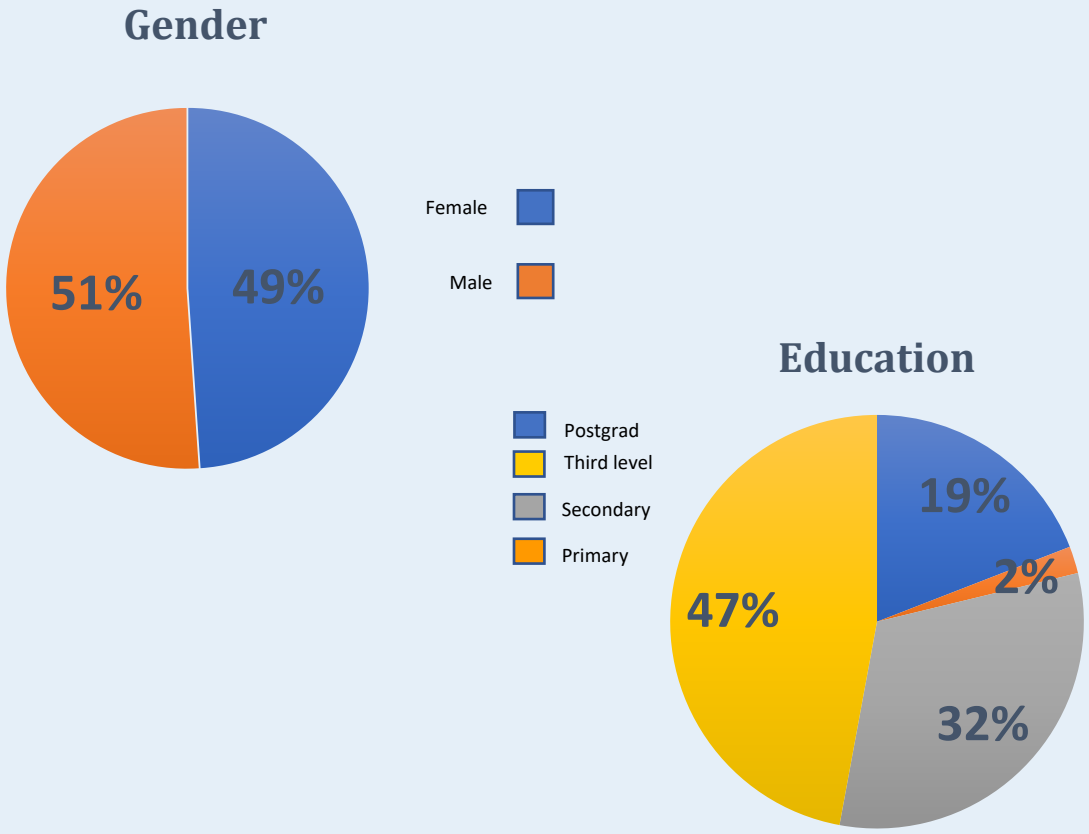


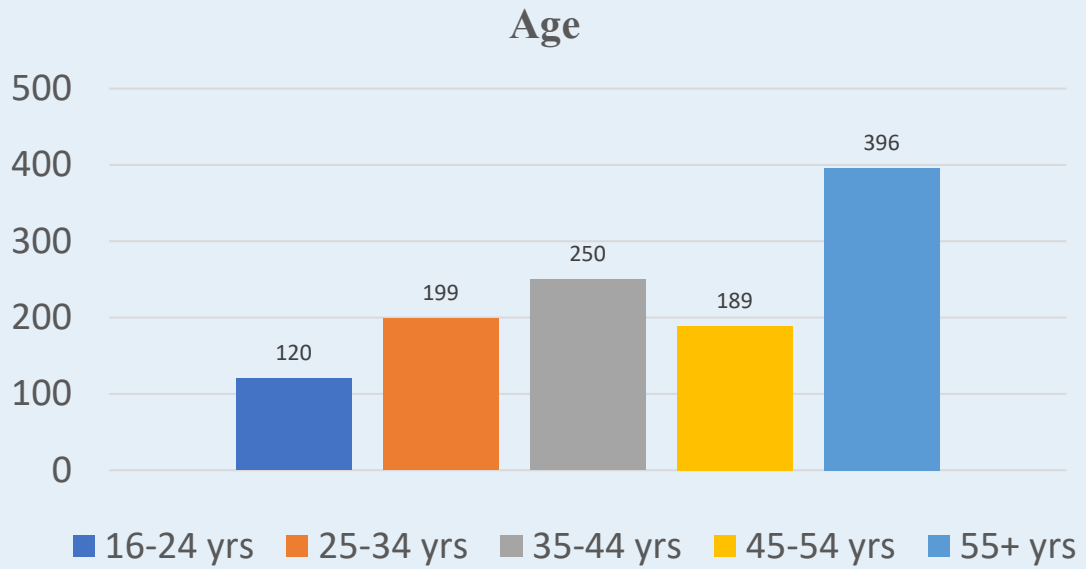
Source: Dublin Sheepdog Group (DSG)

National Survey 24th May and the 1st of July 2019



Survey Responses



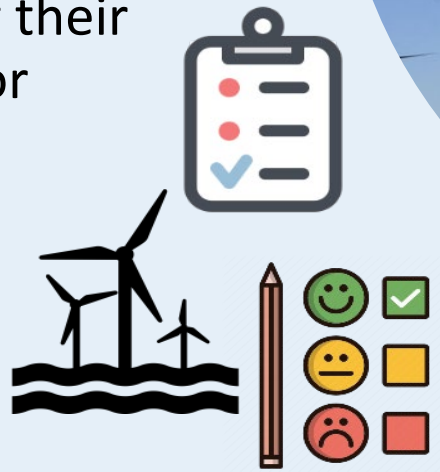


Source: Dublin Sheepdog Group (DSG)

Results

- 87% would facilitate development of an offshore wind farm in their locality (by either not objecting or supporting)

- 93% would facilitate development of an offshore wind farm outside of their locality (by either not objecting or supporting)



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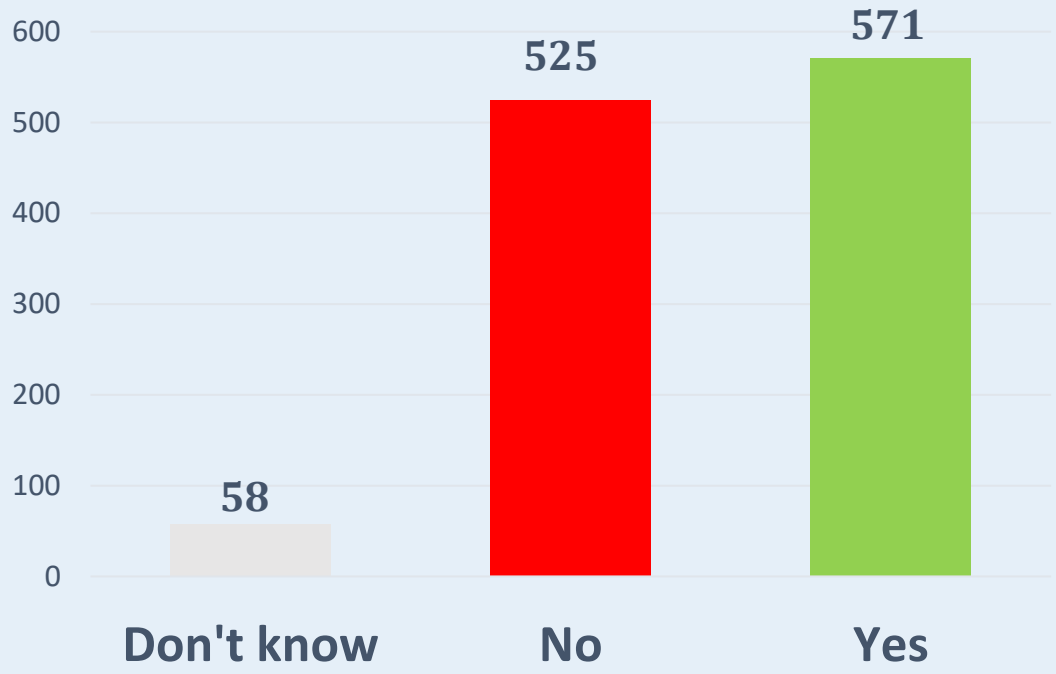
“Experience of offshore wind farms has a significant effect on attitudes towards them” (Ladenburg and Möller, 2011)

Have you ever seen an offshore wind farm?



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1154 respondents
571 Experienced

44 From Home

78 Commute to work

449 on holidays

Positively biased because of holidays?

Clubs
Residents
Businesses
Local Municipal District Council

Phone calls,
Follow up email
invitations

Councillors
local resident
Sailing Club
Representatives

Guided discussion - open ended questions
The Past
The Present
The Future

“They are huge and have a lovely leisurely spin on them, clear white with no noise, perhaps that’s because of the noise of the sea”

“To reduce the ‘fear factor’ take the jargon out of it”

“Its absolutely lovely to see the windmills and the yachts on a summer’s day”

“If you ask the people on the street they couldn’t tell you how many [wind turbines] there are”

“Here in Arklow, we don’t have an island to race around, so we love to race to the wind mills and back”

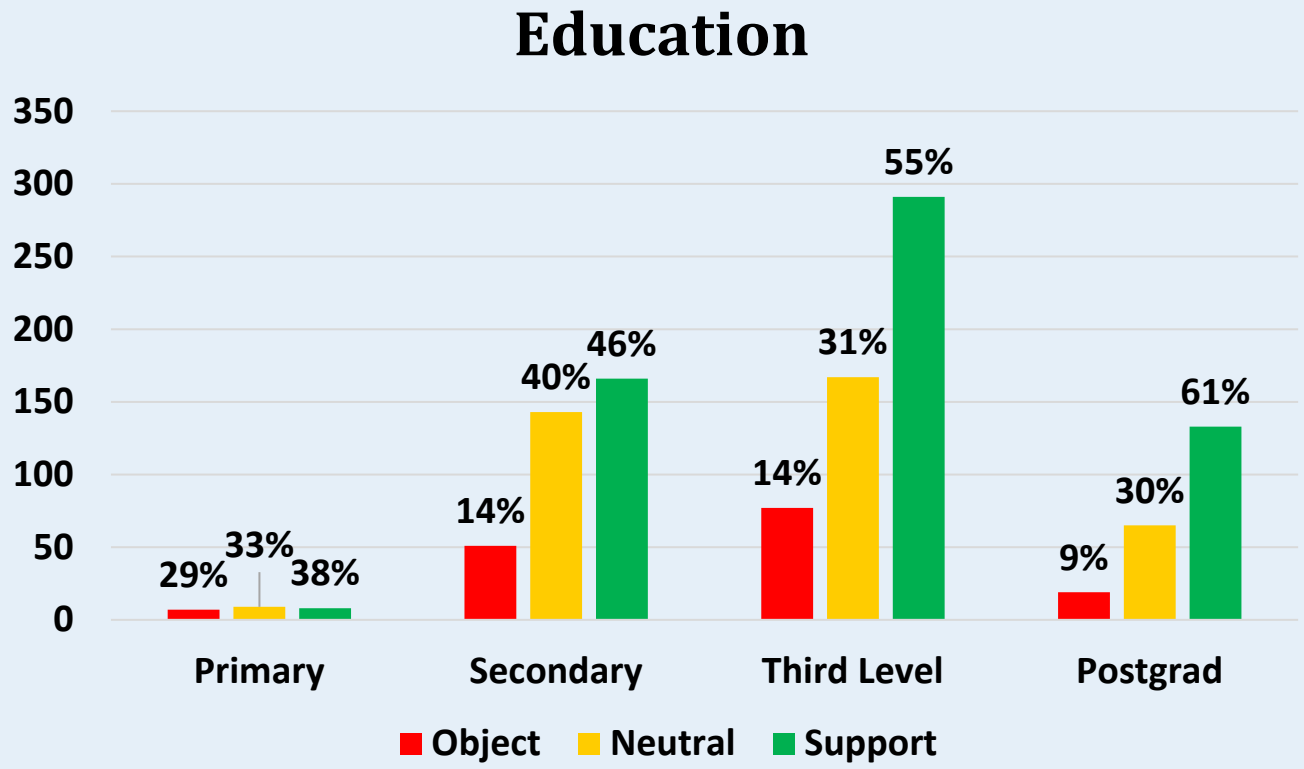
“Its a bit of comfort when you come over the hill and you see the lights at night, you know you’re home”

“Its just a given in our daily lives you get up everyday, you breath everyday, the wind mills are there every day”

Source: Doyle Shipping Group (DSG)

“Opposition to wind farms increases with increased levels of education” (Krueger et al., 2000)

- Attitudes to planned OSWFs change significantly with education levels
- Support of wind farm development increases with higher levels of education



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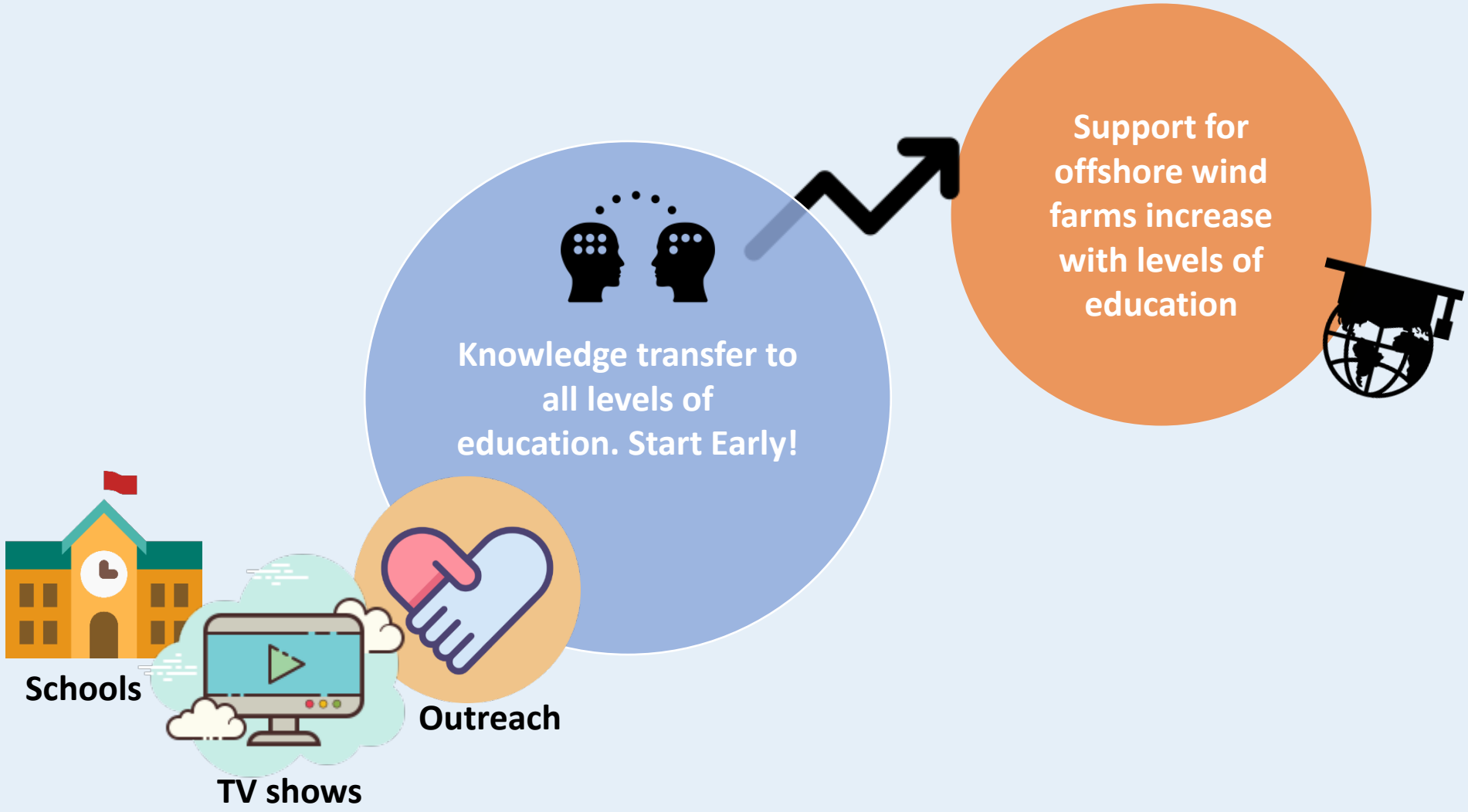
Targeting Messaging - Audiences



Areas of Specific Concern

VISUAL IMPACT

49%

OFFSHORE WIND FARMS ARE INTERESTING TO LOOK AT

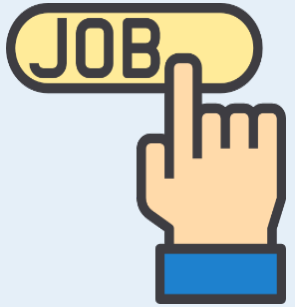
39%

DID NOT NOTICE THE STRUCTURE WHEN LOOKED OUT TO SEA

JOB CREATION

63%

OFFSHORE WIND COULD LEAD TO NEW JOBS



Merit in a National Campaign to Strengthen the perceived link between offshore wind and energy security/ climate change

78% Renewable electricity would make a difference to Irish carbon emissions

65% Ireland is too reliant on foreign energy

73% No changes in current electricity production will result to severe climate disasters

Offshore wind farms help stall climate change **60%**

65% Ireland has limited amount of fossil fuel resources and are running out

Offshore wind electricity is renewable and clean **69%**

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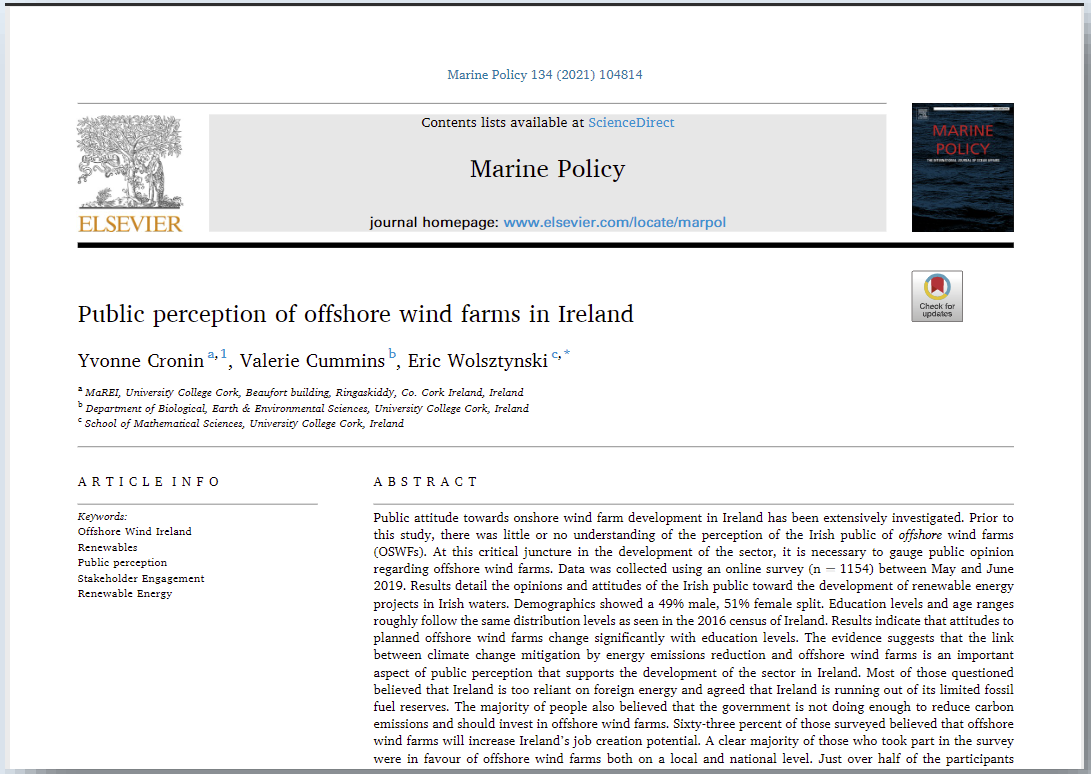
The way forward…

- The Irish Public are ready for and supportive of offshore wind development in Ireland
- Those who already have an offshore wind farm in their area are positive about existing and further development …to a point
- Early and transparent engagement is key
- We need to build on these positive results….. to match the success, we already have onshore

Source: Iberdrola – Wikinger Offshore Wind Farm

Public Perception of Offshore Wind Farms in Ireland



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Public perception of offshore wind farms in Ireland

Yvonne Cronin [a,1], Valerie Cummins [b], Eric Wolsztynski [c,*]

[a] MaREI, University College Cork, Beaufort building, Ringaskiddy, Co. Cork Ireland, Ireland
[b] Department of Biological, Earth & Environmental Sciences, University College Cork, Ireland
[c] School of Mathematical Sciences, University College Cork, Ireland

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Stakeholder Engagement
Renewable Energy

ABSTRACT

Public attitude towards onshore wind farm development in Ireland has been extensively investigated. Prior to this study, there was little or no understanding of the perception of the Irish public of *offshore* wind farms (OSWFs). At this critical juncture in the development of the sector, it is necessary to gauge public opinion regarding offshore wind farms. Data was collected using an online survey (n = 1154) between May and June 2019. Results detail the opinions and attitudes of the Irish public toward the development of renewable energy projects in Irish waters. Demographics showed a 49% male, 51% female split. Education levels and age ranges roughly follow the same distribution levels as seen in the 2016 census of Ireland. Results indicate that attitudes to planned offshore wind farms change significantly with education levels. The evidence suggests that the link between climate change mitigation by energy emissions reduction and offshore wind farms is an important aspect of public perception that supports the development of the sector in Ireland. Most of those questioned believed that Ireland is too reliant on foreign energy and agreed that Ireland is running out of its limited fossil fuel reserves. The majority of people also believed that the government is not doing enough to reduce carbon emissions and should invest in offshore wind farms. Sixty-three percent of those surveyed believed that offshore wind farms will increase Ireland's job creation potential. A clear majority of those who took part in the survey were in favour of offshore wind farms both on a local and national level. Just over half of the participants

https://authors.elsevier.com/sd/article/S0308-597X(21)00425-5

https://www.marei.ie/eirwind-offshore-strategy/

DP ENERGY

More Information

Yvonne Cronin, Community and Stakeholder Liaison Manager

Phone: 0871028227

Email:Yvonne.Cronin@dpenergy.com

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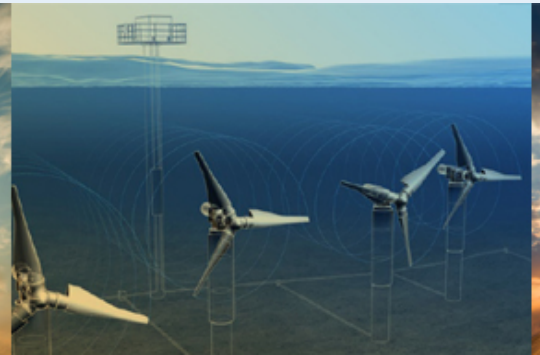



The importance of social acceptance in developing the Igiugig Hydrokinetic Project

Brendan Cahill – ORPC Ireland

Interreg North-West Europe OPIN
European Regional Development Fund

The importance of social acceptance in developing the Igiugig Hydrokinetic Project

Brendan Cahill, Director of European Development

November 16, 2021

ORPC

Improving people's lives, and their environment, through sustainable energy solutions

Introduction to ORPC

Patented technology, proven through 12 successful deployments since 2010

- HQ in Portland, Maine; 30+ employees; founded 2004
  - Subsidiaries in Quebec, Ireland and Chile
- Patented hydrokinetic technology, proven in both tidal and river applications
  - A family of 5 patents filed in 14 countries
- Best-in-industry project development and permitting capabilities
- Business model acclaimed for inclusion and empowerment
- Recipient of 28 project grants from state, federal and international agencies

U.S. DEPARTMENT OF ENERGY

EU Horizon 2020

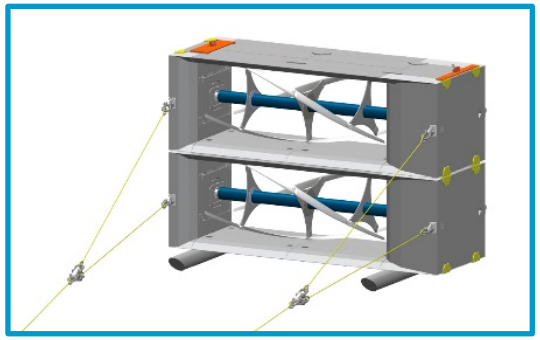
ALASKA ENERGY AUTHORITY

seai SUSTAINABLE ENERGY AUTHORITY OF IRELAND

Natural Resources Canada

ORPC Product Pipeline

A portfolio of products that address
all segments of the river and tidal markets



Modular RivGen

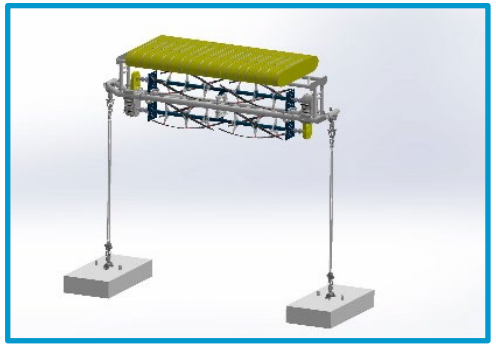
1 Turbine, stackable
30-50 kW
Rivers/Tailraces/Canals

Under Development
(DOE Project)

RivGen

2 Turbines
40-80 kW
Remote Communities

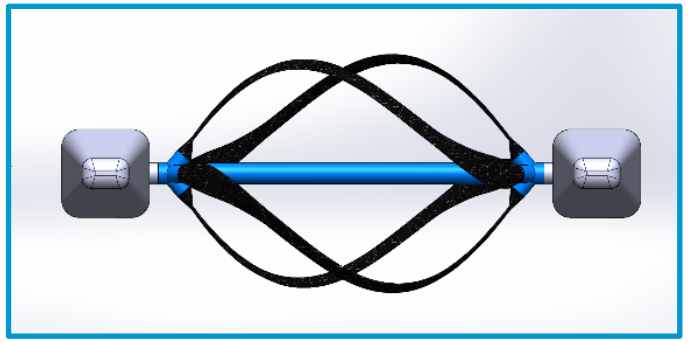
Deployed
Igiugig, Alaska



TidGen-80

4 Turbines
80-120 kW
Tidal Locations

Under Development
(DOE Project)



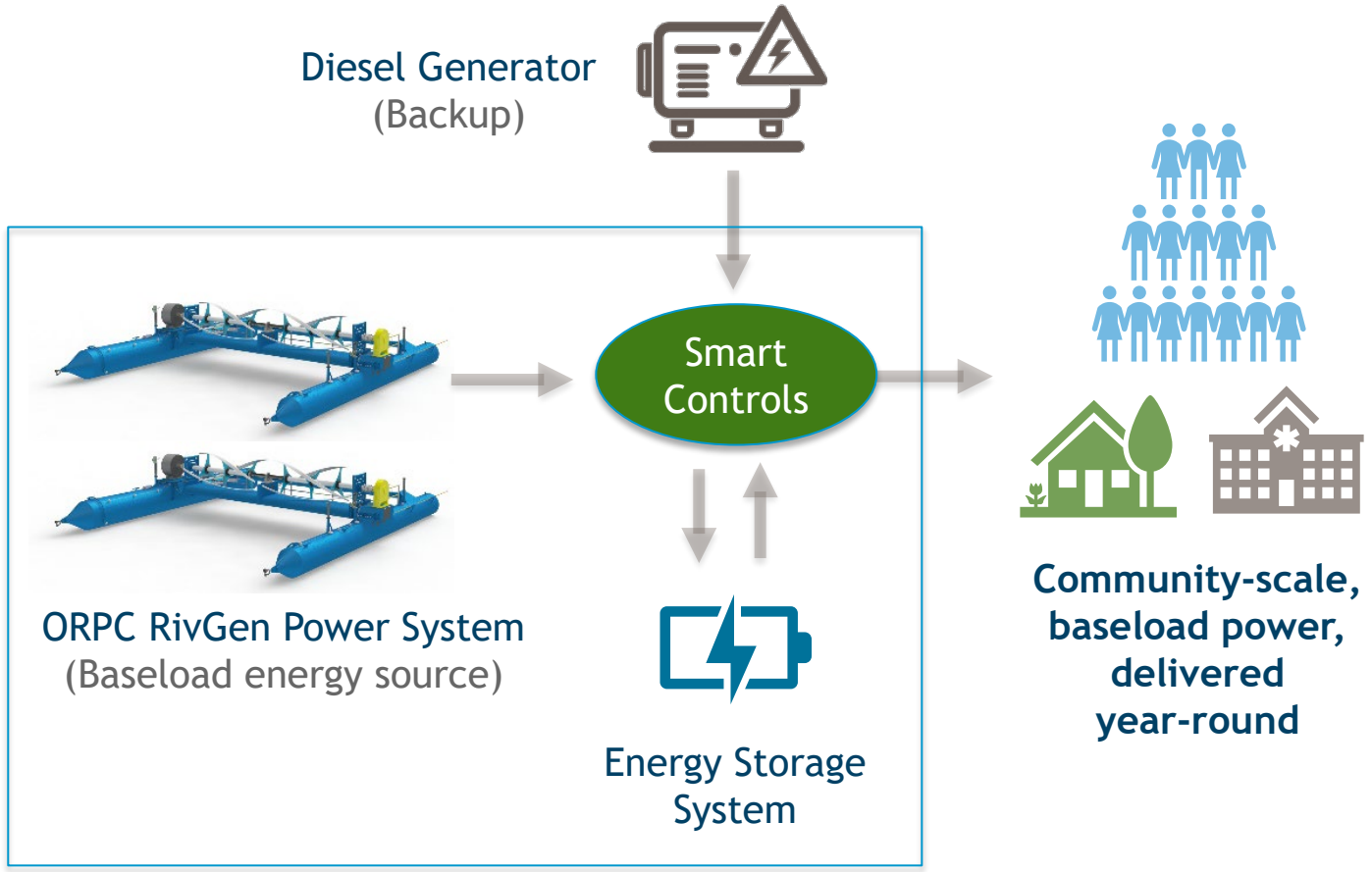
Optimor

1 Large Turbine
1-2 MW
Tidal Locations

Under Development
(Horizon 2020 in EU)

ORPC's microgrid product delivers baseload renewable energy from free-flowing rivers and tides

- A RivGen-powered smart microgrid can relegate diesel generators to backup only.
- RivGen provides constant, predictable power (baseload).
- Energy storage and smart controls, coupled with RivGen baseload power, improve the value proposition of intermittent sources like wind and solar.



Development Process and Stakeholder Engagement

- Fundamental to ORPC's deployment success and brand
- Based on frequent and transparent communication
- Includes host communities, marine users, governmental officials, and regulatory agencies

The Igiugig Hydrokinetic Project

The Igiugig Hydrokinetic Project

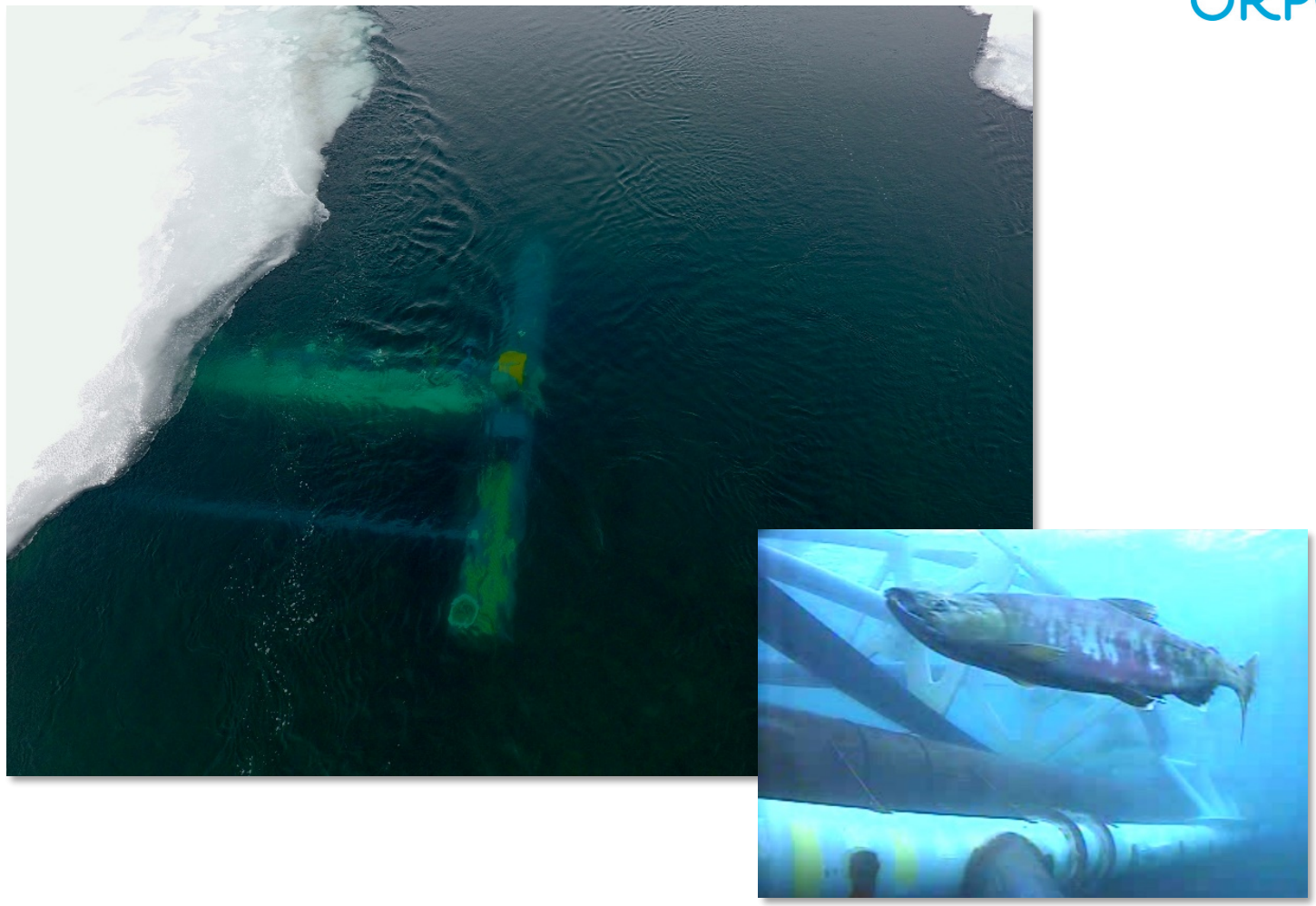
Longest-operating river hydrokinetic project in the Americas

Existing energy infrastructure

- Diesel powered power plant
- Diesel brought to the community by barges or by DC-4

Project Highlights

- Deployed for 20 consecutive months
- Over 16 million turbine rotations
- No observed negative effects to environment
- Survived multiple Alaskan winters (-40 C), frazil ice event and break-up of over 2 feet of lake ice flowing over it



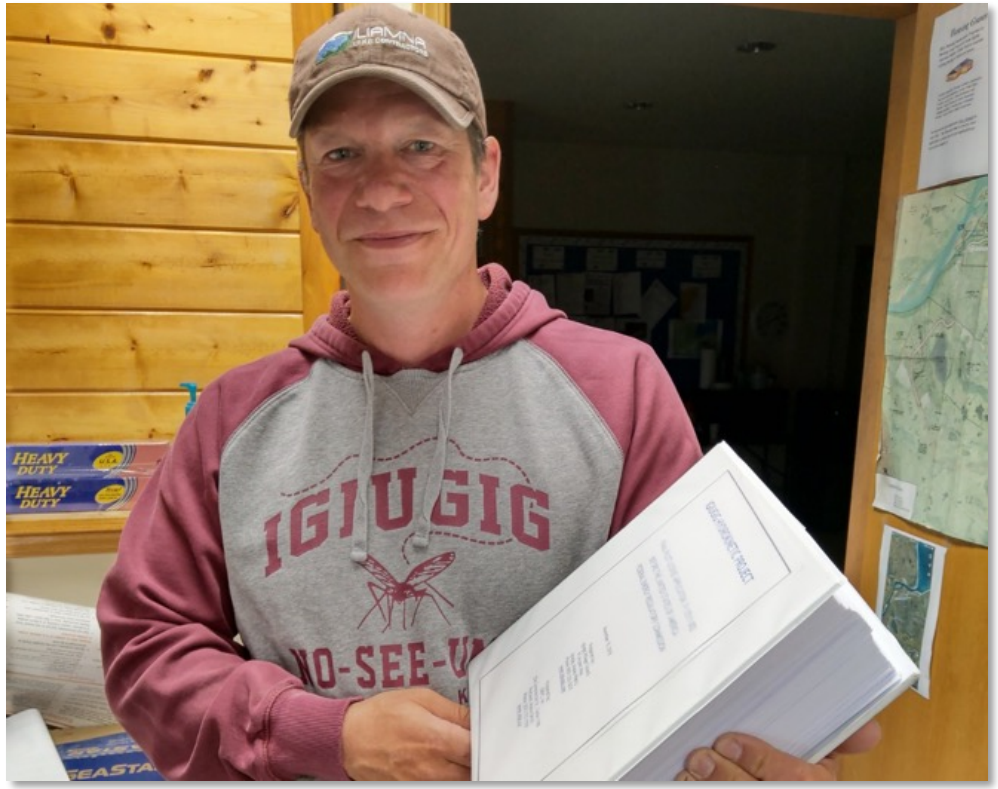
A remarkable achievement in partnership with the community of Igiugig

Watch the video: https://youtu.be/GxjELfnX5xc

The importance of social acceptance in developing the project

IVC Federal Energy Regulatory Commission license

In May 2019, the Igiugig Village Council became the first tribal entity in the U.S. to achieve Federal Energy Regulatory Commission approval for a 10-year pilot project license to construct, operate and maintain the Igiugig Hydrokinetic Project.

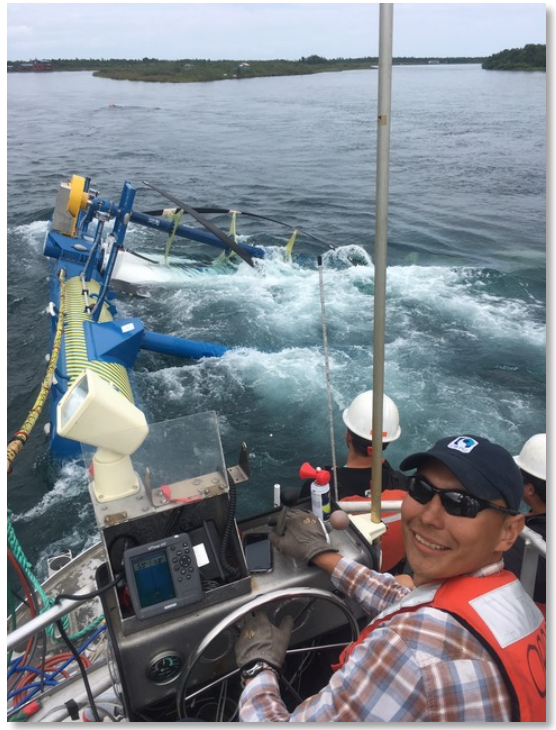


Karl Hill, Vice President, Igiugig Village Council, with FERC license application

Project execution

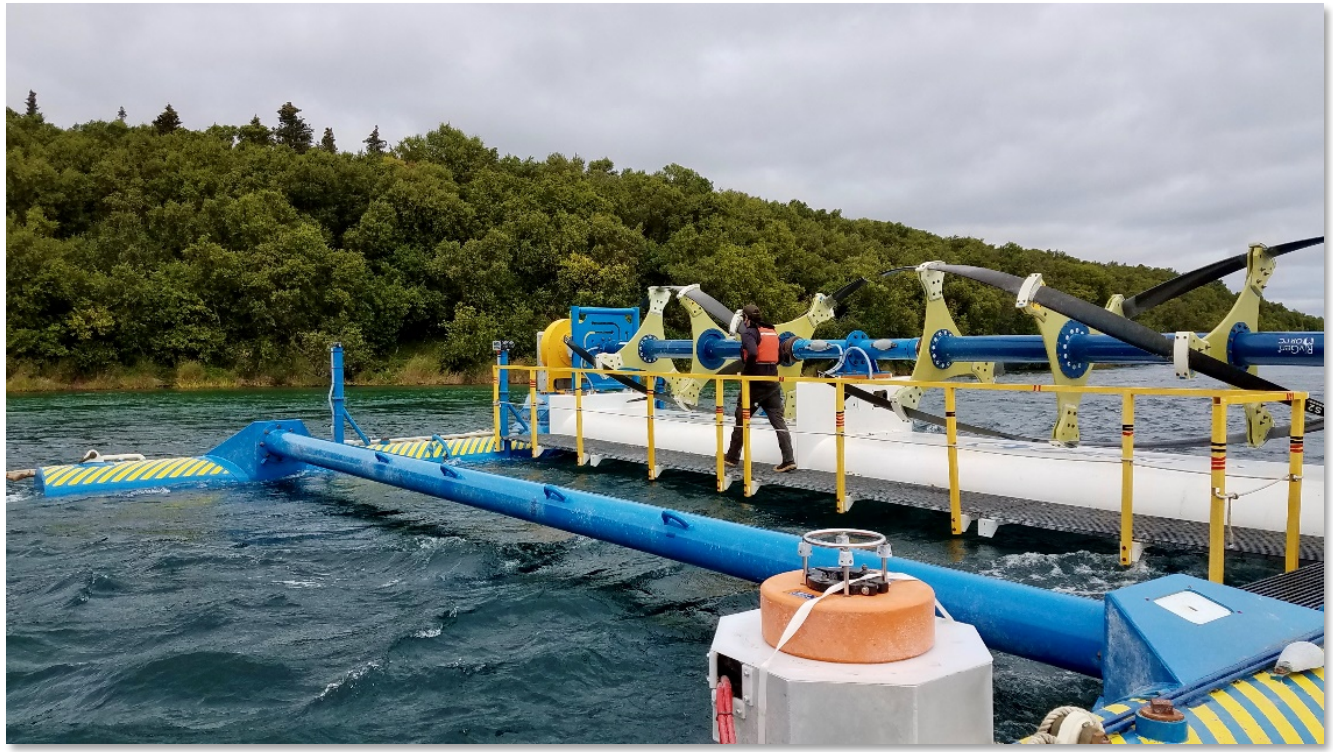
Build, assemble, deploy, operate, monitor, maintain…

Inclusion of the community and working with local resources is key to the success of the project



Planned Maintenance During a Pandemic

- Our 2020 planned inspection and maintenance event occurred with support from local workforce and with strict COVID protocols in place
- ORPC and IVC collaborated extensively to develop protocols to protect the health of workers and the community including:
  - State accepted COVID plan
  - Testing prior to travel
  - Quarantine during time on site
  - Masks and social distancing implemented during operations



Community Input in ORPC Tidal Energy Projects

Co. Donegal Feasibility Study, Ireland

- Key objectives included:
  - Identifying areas with potential for tidal energy (depth, velocity, access, environmental considerations, existing marine use)
  - Evaluating potential supply chain companies
  - Consenting considerations
  - Community engagement
- Developed lasting relationships with local partners and supply chain companies
- Partnership with the Donegal County Council was instrumental to the success and direction of the assessment
- Process has informed ORPC's approach to growth in Ireland and Europe

Tidal Energy Resource Assessment
Nunavut, Canada

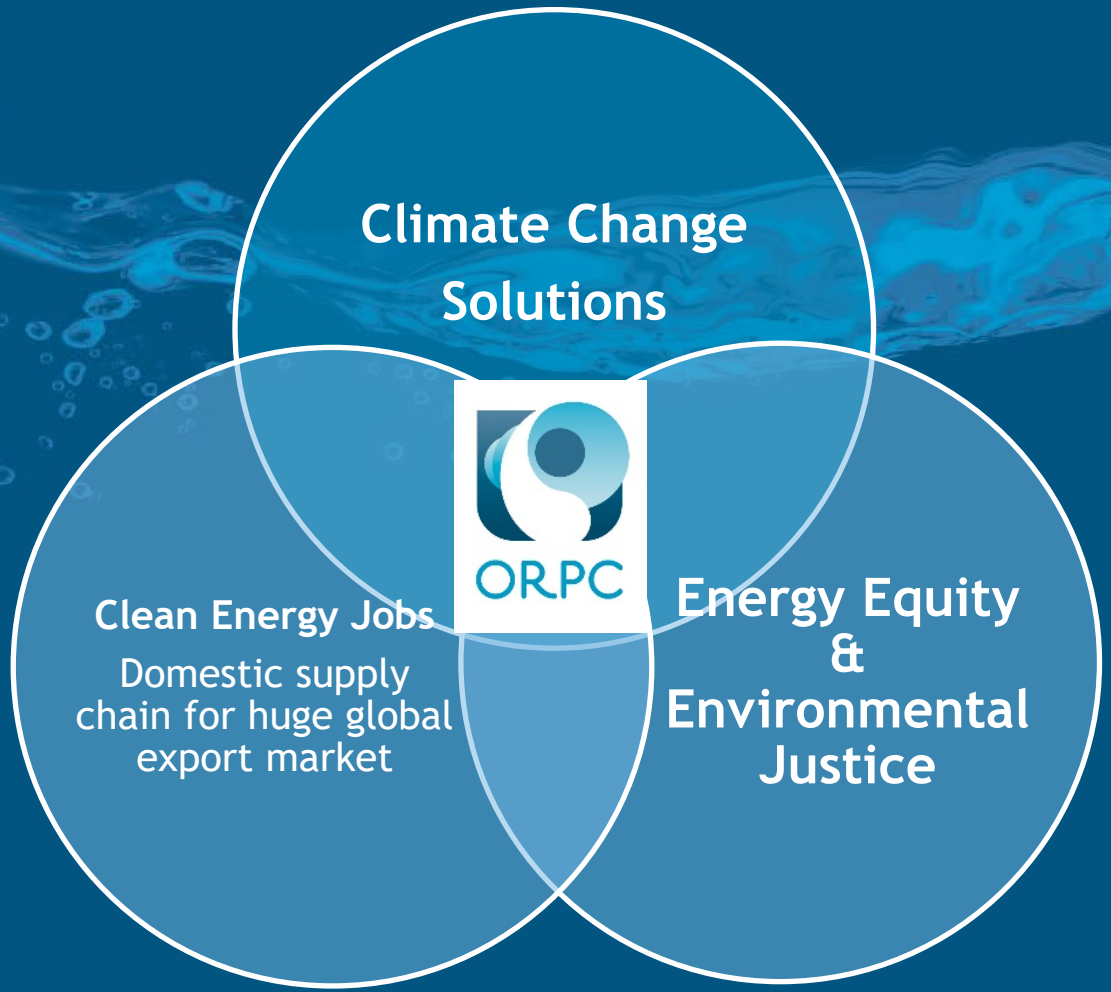
- Desktop analysis completed for 13 communities in 2021
- Field measurements made in August 2021 in collaboration with five communities using local vessels and captains
- Detailed measurement campaigns planned in two communities in 2022

Eastport Smart Microgrid Solution, USA

- TidGen® Power System
  - First federally-licensed ocean energy project to send power to regional grid in all of the Americas
  - 100 local jobs supported
  - Over 280 partners, contractors, service providers in 14 of Maine's 16 counties
- Eastport and ORPC have signed MOU to document their economic development partnership
- ORPC will be initiating the installation of the next generation TidGen device in 2022
- Improves resiliency of how electricity is delivered, used and managed
- Eastport becomes a model smart grid city operating on 100% local renewable energy

Thank You

bcahill@orpc.co

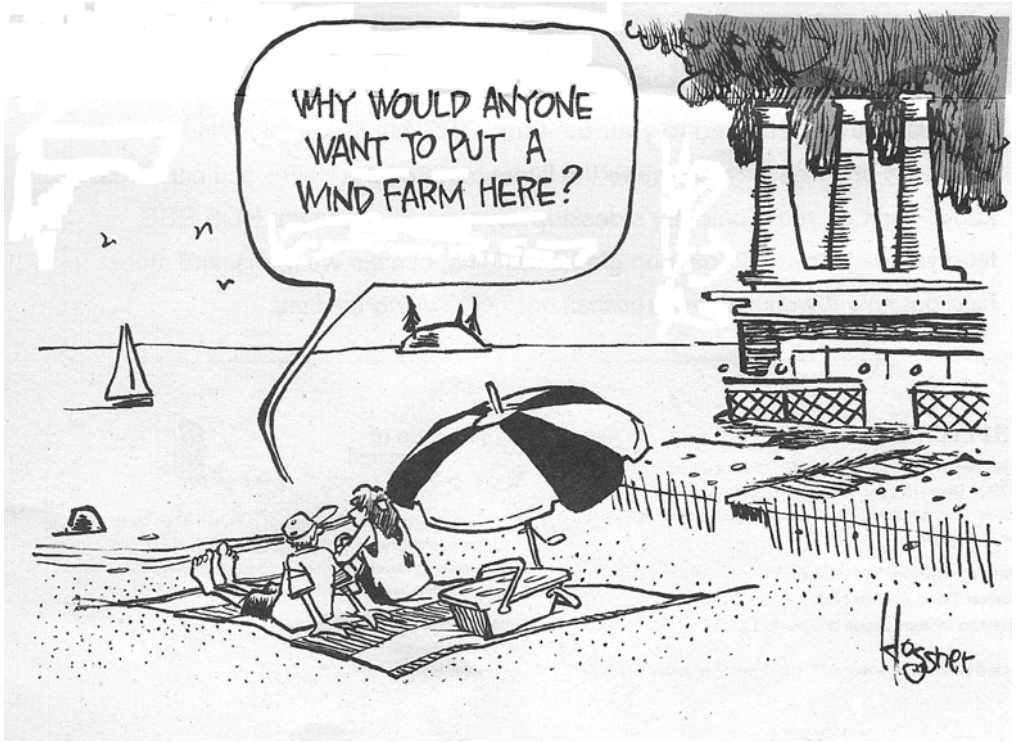


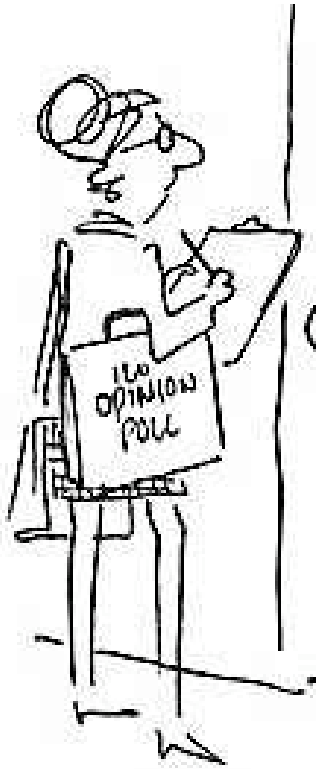
The Block Island (USA) offshore wind power project

Jeremy Firestone - University of Delaware

Interreg North-West Europe OPIN
European Regional Development Fund

The Block Island (USA) Offshore Wind Power Project: It's not rock and roll, but do you like it?





Jeremy Firestone
University of Delaware

November 16, 2021
OPIN

Social Acceptance in Context

- Not in my backyard (**NIMBY**)
  - Often used as a pejorative
  - More a description of opposition than an explanation
  - Opposition may be better seen as **place-protective actions** (Devine-Wright, 2009)

- **Social constructs**, such as wind power's representation of a **clean energy future**, may be more important than physical attributes

- Issues of procedural justice permeate attitudes

- Typically presented a narrow choice set (offshore wind or nothing), the choice is a one off, and much research is a single snapshot in time

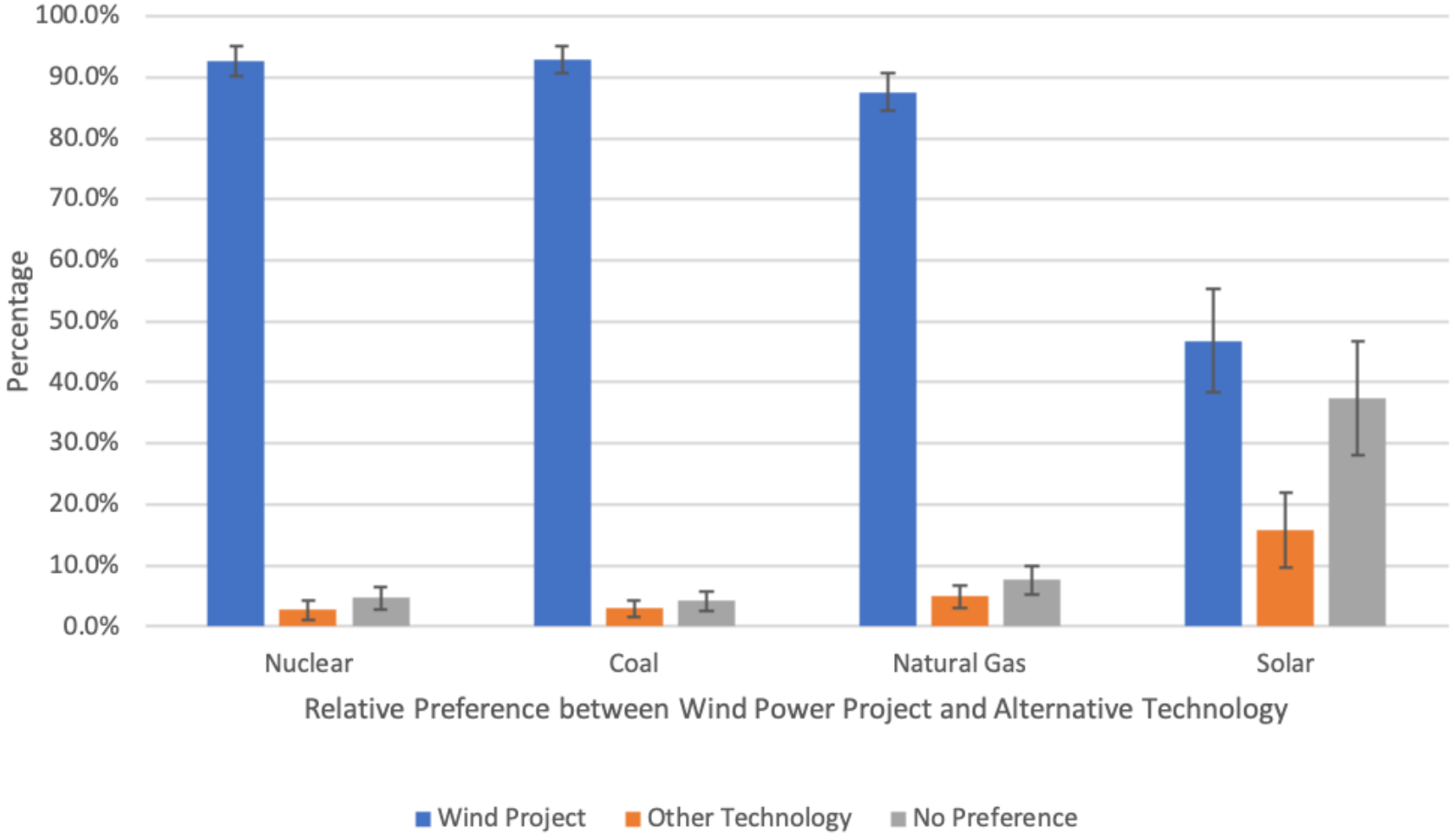
Source Choice, but we typically inquire as to one's attitude toward a particular renewable energy project

(2016 National survey of individuals living within 5 miles of a land-based wind turbine)

Would you rather live near the Wind Project or a ["fuel] Plant?

A respondent could then select among four options:

- **Wind project**
- **["Fuel"] plant**
- **No preference**
- **Don't know**



Firestone and Kirk, 2019

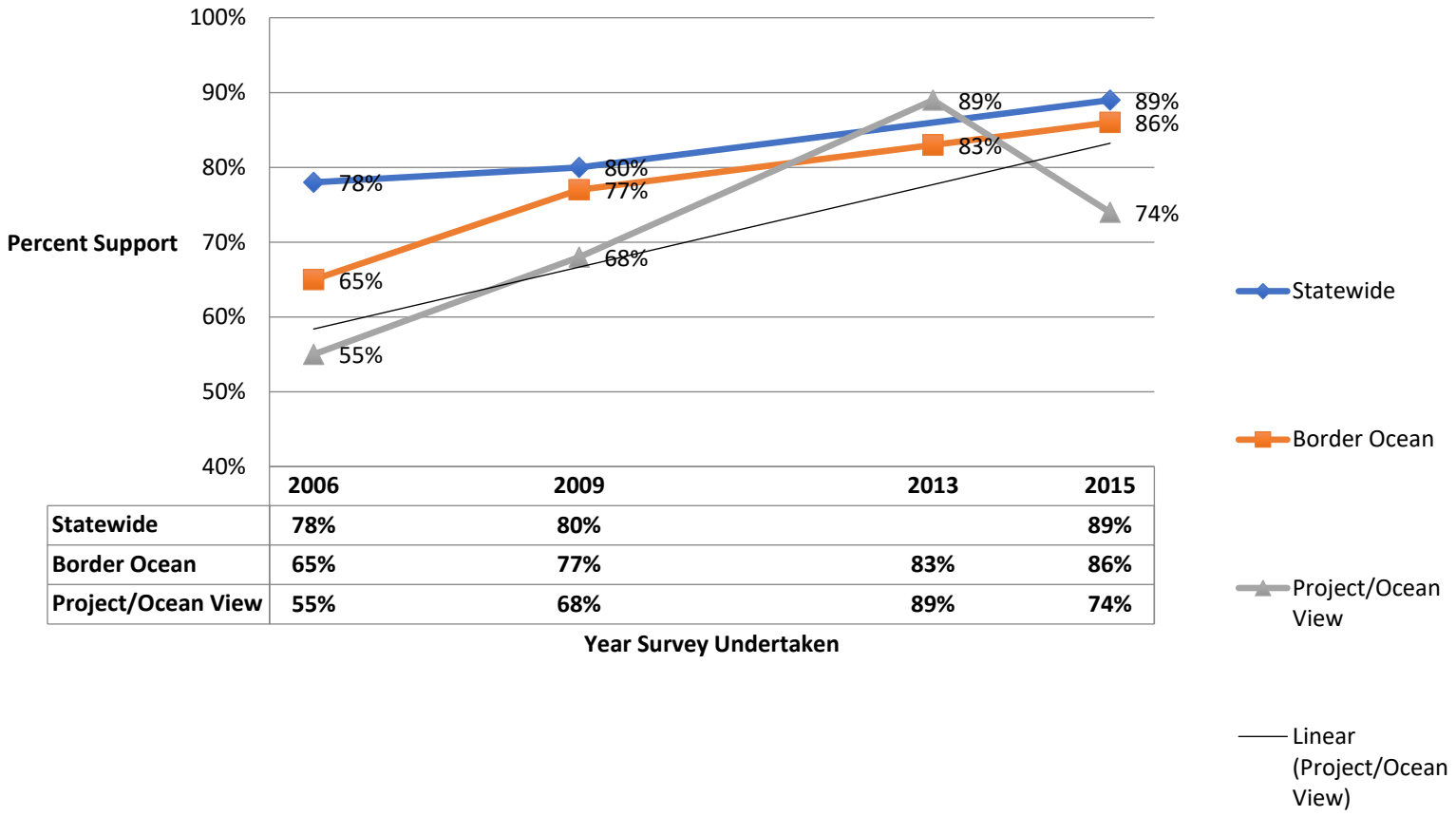
Individuals are more likely to support a local project if the local project is to be part of an energy transition rather than a one-off

Are individuals who "have not yet made up their mind" about a local project more or less likely to support that project if it was the ***first*** of many (300) projects? (2009 survey results)

Survey Area	More	Less
Cape & Islands	61%	6%
DE Ocean	71%	10%
DE Statewide	57%	9%

Opinion can change over time

Percent Support of Offshore Wind Power by Delaware Residents by Area



	2006	2009	2013	2015
Statewide	78%	80%		89%
Border Ocean	65%	77%	83%	86%
Project/Ocean View	55%	68%	89%	74%

Year Survey Undertaken

Block Island in Context

An industry in the making

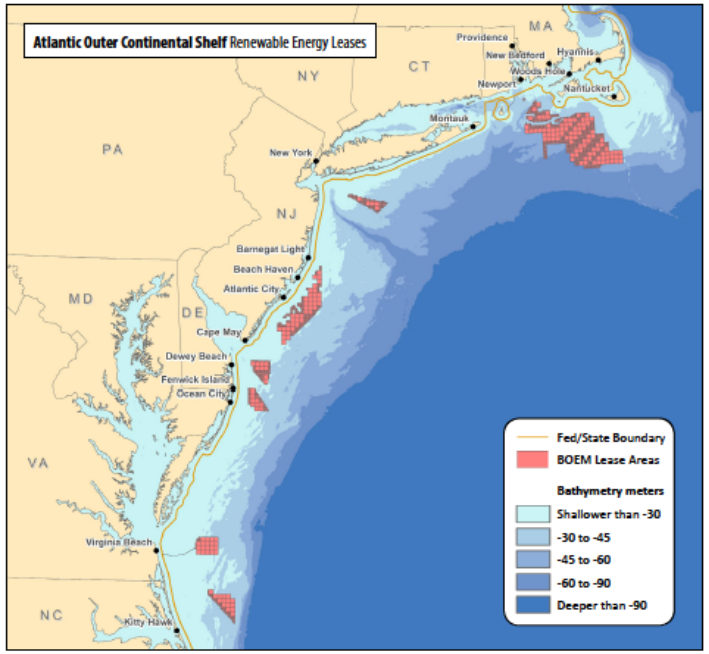
42 MW installed

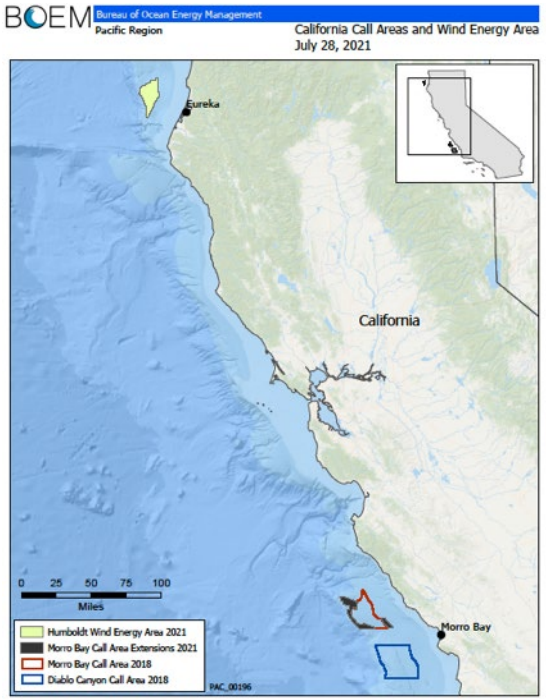
40,500 MW planned

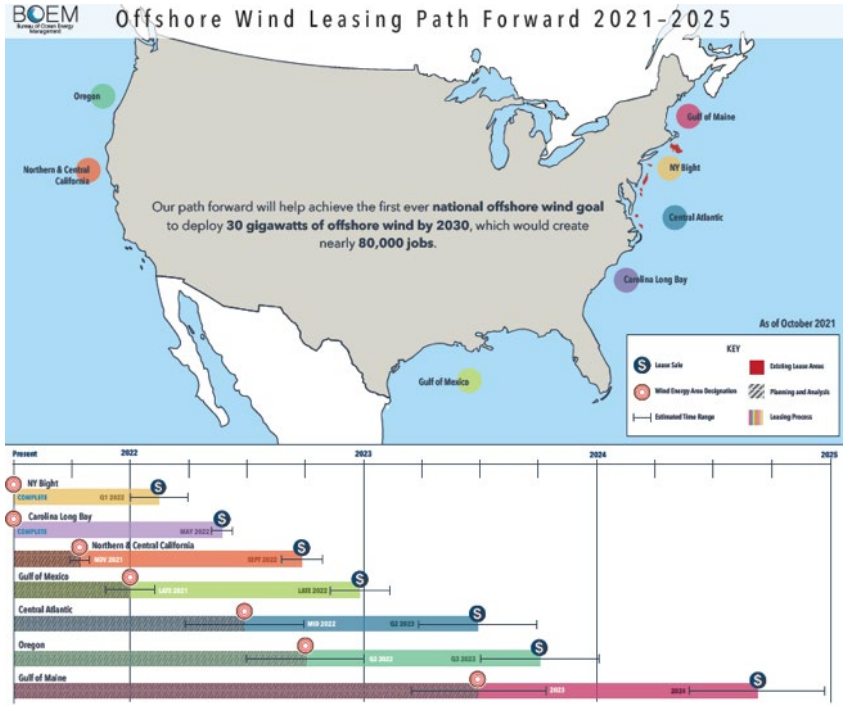
- Experienced developers, e.g.,
  - Ørsted
  - Avangrid
  - Copenhagen Infrastructure Partners
  - Shell/EDF

- Atlantic coast States in the game
  - MA, RI, CT, NY, NJ, MD, VA, NC

- Pacific/Gulf coast states coming?
  - CA, OR, HI, TX, LA



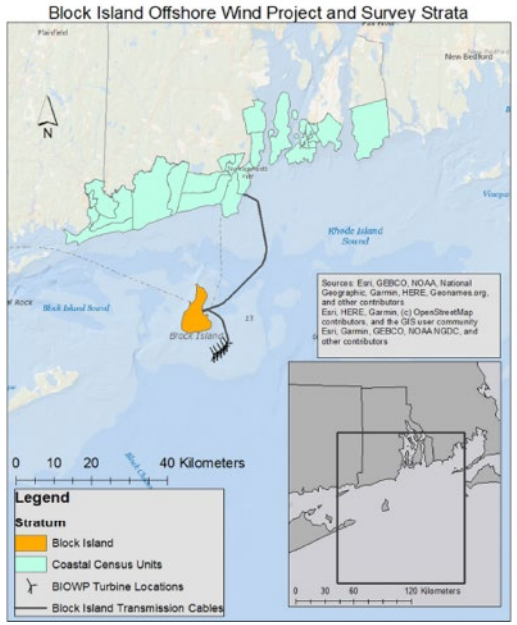




BOEM

Block Island OSW Project Study Mechanics
(Commissioned Dec 2016)

- **Study**
  - Block Island Residents
    - 5 km from project
    - Previously isolated from grid; diesel generated-electricity
  - Mainland Coastal Residents
    - > 26 km from project



- **Place**
  - 26 square km
    - ~50% protected space
  - 27 km of beaches
  - Project in “state” waters

- **Longitudinal surveys**
  - Summer 2016
  - Winter 2017
  - Winter 2018

- **Interview set foci**
  - Public participation
  - Attitude shift

Opposition to and support of the Block Island OSW project before and one-year after

	Block Island		Coastal Rhode Island	
	Pre-installation	One-year operation	Pre-installation	One-year operation
Oppose	15%	10%	9%	5%
Lean Oppose	1%	3%	1%	3%
Neutral	1%	2%	1%	2%
Lean Support	13%	4%	30%	21%
Support	70%	81%	58%	68%

Attitude Change 2016 to 2018

Who Moved Positive?

- Less confident in opinion in 2016
- Less positive general attitude toward wind power
- Local benefits outweighed any procedural flaws
- Habituated over time

Who Moved Negative?

- Cost savings not realized
- American developer sold to European
- Fear of industrialization
- Doubts about wind power's long-term viability compared to other sources

What about fair process/procedural justice?

" Oh that's ***real nice !*** - - And what about ***due process*** ? "

- **Fair process may lead to:**
  - More informed decision-making
  - "Better" results
  - More positive attitudes toward a project
- Otherwise, "conditional supporters may turn into objectors" (Wolsink 2007)

Change in opinion of BI OSW project in light of the planning process

	Block Island (n=110)	Coastal RI (n=297)
More positive	**33%**	**20%**
Unchanged	52%	75%
More negative	**15%**	**5%**

Regression Modeling:
Support for/opposition is the dependent variable

Variables in Regression (significant)

- **Predicted process fairness**
- Own (versus rent) dwelling
- See project
- Fisher
- Fishing importance
- Directly affected by project
- Turbine appearance perception
- **Turbine fit**

Odds of support

- Those with highest perceptions of process fairness are 15.5x those with mean perception

Process fairness determinants

- As a precursor, we find **state trust,** followed by **developer transparency** to be the most important determinants (compared to taking action, having a say in MSP, or having a say in project planning and demographics)

Appearance - Do you like the way the wind turbines look?

	Block Island	
	Supporters	Opponents
Yes	94%	25%
No	6%	75%

Landscape Fit - Those opposed indicate that the wind turbines do not fit

Block Island residents	Agree	Somewhat Agree	Neither agree nor disagree	Somewhat disagree	Disagree
Day Support	57%	13%	14%	10%	5%
Day Oppose	0%	0%	12%	0%	88%
Night Support	48%	11%	30%	5%	6%
Night Oppose	0%	0%	16%	4%	80%

Project Representations/meanings - wind turbine description

	Block Island		Coastal RI	
Description	Support	Oppose	Support	Oppose
Impressive	77.3%	42.5%	51.8%	2.1%
Too Big	3.0%	79.8%	8.8%	23.3%
Attractive	30.8%	0.0%	12.1%	1.5%
Unattractive	2.4%	79.8%	5.1%	63.9%
Beautiful	28.9%	0.0%	6.6%	0.0%
Industrial	11.4%	83.8%	14.1%	60.7%
Amazing	40.4%	0.0%	22.4%	0.6%
Ordinary	0.0%	2.5%	7.8%	25.9%
Add to the island/coastal character	33.9%	0.0%	16.2%	0.0%
Detract from the island/coastal character	7.0%	87.7%	12.5%	51.2%
Symbolic of clean energy progress	97.1%	13.8%	80.4%	5.4%
Cause intangible loss where all you see is the ocean	21.6%	68.1%	11.8%	51.9%
Other	6.0%	0.0%	3.0%	49.4%
n	77	10	205	24

Place Meaning - Thoughts, feelings, memories, or associations that come to mind when those from BI think about the local coastal and ocean environment

1.
   - Solitude
   - Introspection

2.
   - Family and Community Identification
   - Social Bonding

3.
   - Beauty
   - Contrast to Everyday

4.
   - Pristineness
   - Ecology

5.
   - Recreation
   - Exploration

6.
   - Sustainable Economic Uses
   - Traditional Economic Uses

In contrast to Place Attachment, Identity & Meaning

- **Attachment**
  - "The ocean beach I most often visit is one of my **favorite places**"

- **Identity**
  - "I can really **be myself at the ocean**."

- **Dependency**
  - "For the **things I enjoy most, no place can compare** to the ocean."

  - **Index** constructed from activities a respondent engaged in and importance to him/her

Place Meaning

Top 3 thoughts, feelings, memories, or associations that come to mind when Block Island residents think about the local coastal and ocean environment

	Top	Top 3
Beauty	37%	70%
Family and Community Identification	33%	42%
Pristineness	11%	34%
Recreation	3%	29%
Ecology	7%	25%
Solitude	2%	24%
Bonding	1%	22%
Contrast to Everyday	6%	16%
Exploration	0%	13%
Introspection	1%	10%
Sustainable Economic Uses	0%	7%
Traditional Economic Uses	1%	7%

Meaning Consistency: Is the project consistent or inconsistent with the top 3 choices …?

Meaning Rank	BI		Coastal	
	Consistent (%)	Inconsistent (%)	Consistent (%)	Inconsistent (%)
1	40	17	44	13
2	40	13	35	15
3	42	13	38	16

Note: Neither consistent nor inconsistent excluded from table

Thinking fast (emotional/affect)
versus
Thinking slow (using probability calculus, formal logic, risk assessment/cognitive)

- Emotions of **pride** and **anger** have more explanatory power than
  - Landscape **fit**
  - Wind energy being **reliable** source of electricity
  - The project being symbolic of **progress**

Questions welcomed

Thank you!

Jeremy Firestone
Professor, School of Marine Science and Policy
Professor, Biden School pf Public Policy & Administration
Director, Center for Research in Wind (CReW)
jf@udel.edu

UNIVERSITY OF DELAWARE

CReW
Center for Research in Wind

Actions and involvement in the planning process

	Block Island (n=111)	Coastal RI (n=306)
Took one or more specified actions	59.5%	15.5%
Attended meeting	50.7%	10.4%
Spoke at meeting	24.1%	2.6%
Wrote or spoke to a government official	23.3%	2.9%
Other	14.7%	1.4%
Wrote a Letter to the Editor	4.6%	0.0%
Contributed to webpage	3.0%	3.2%
Put up sign	0.5%	2.4%

Ordered from highest to lowest percentage of Block Islanders

Q&A Session

Interreg
EUROPEAN UNION
North-West Europe
OPIN
European Regional Development Fund

Q&A Session

Lotta Pirttimaa, Ocean Energy Europe - *Ocean energy – in harmony with local communities and environments*

Garry Keegan, Infrastructure Projects Consulting - *Stakeholder engagement and community benefits*

Yvonne Cronin, DP Energy - *Public perception of offshore wind farms in Ireland*

Brendan Cahill, ORPC Ireland - *The importance of social acceptance in developing the Igiugig Hydrokinetic Project*

Jeremy Firestone, University of Delaware - *The Block Island (USA) offshore wind power project*

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