Tiree Onshore Scenario Mapping Project

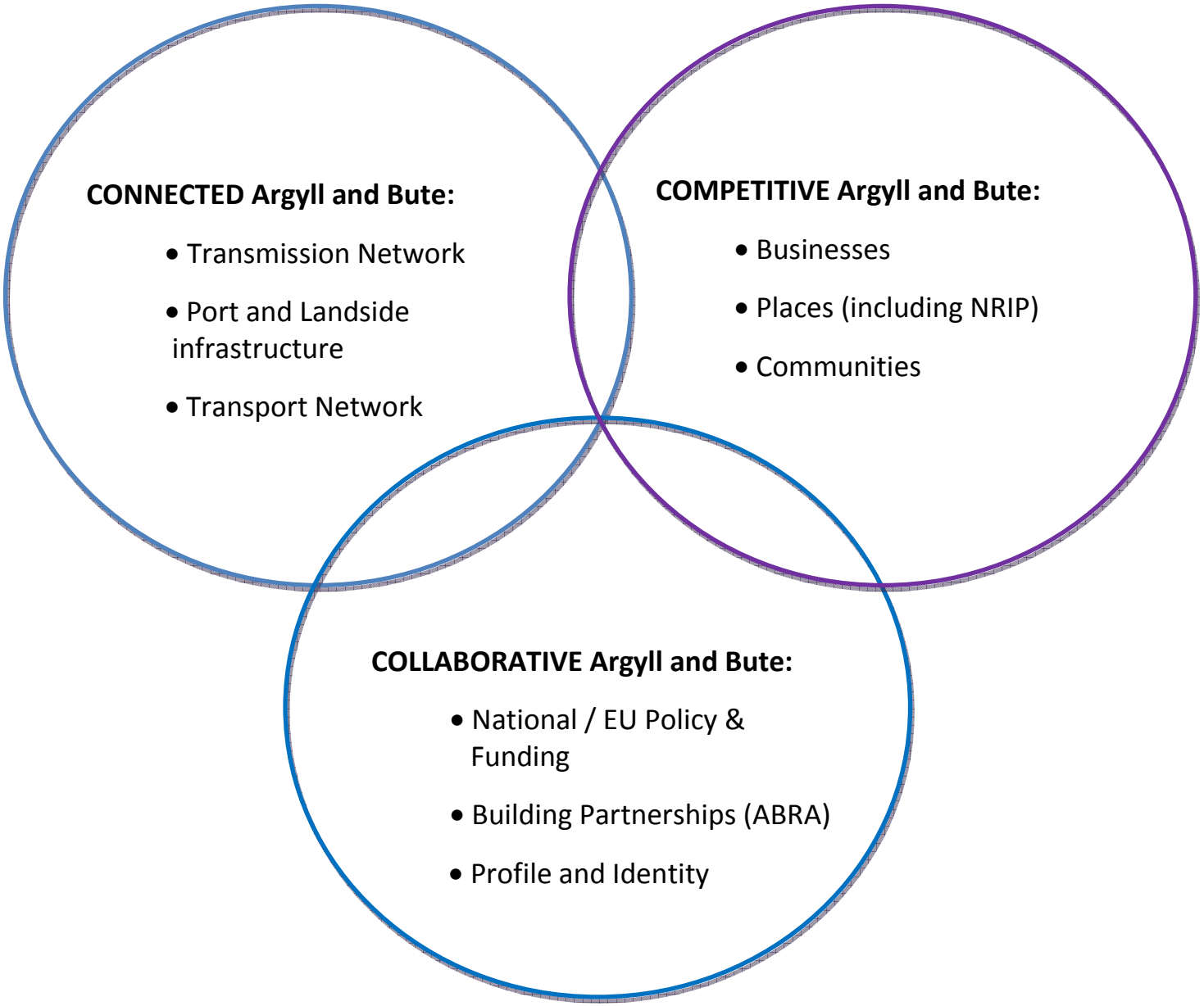
Renewable Energy Action Plan (REAP)

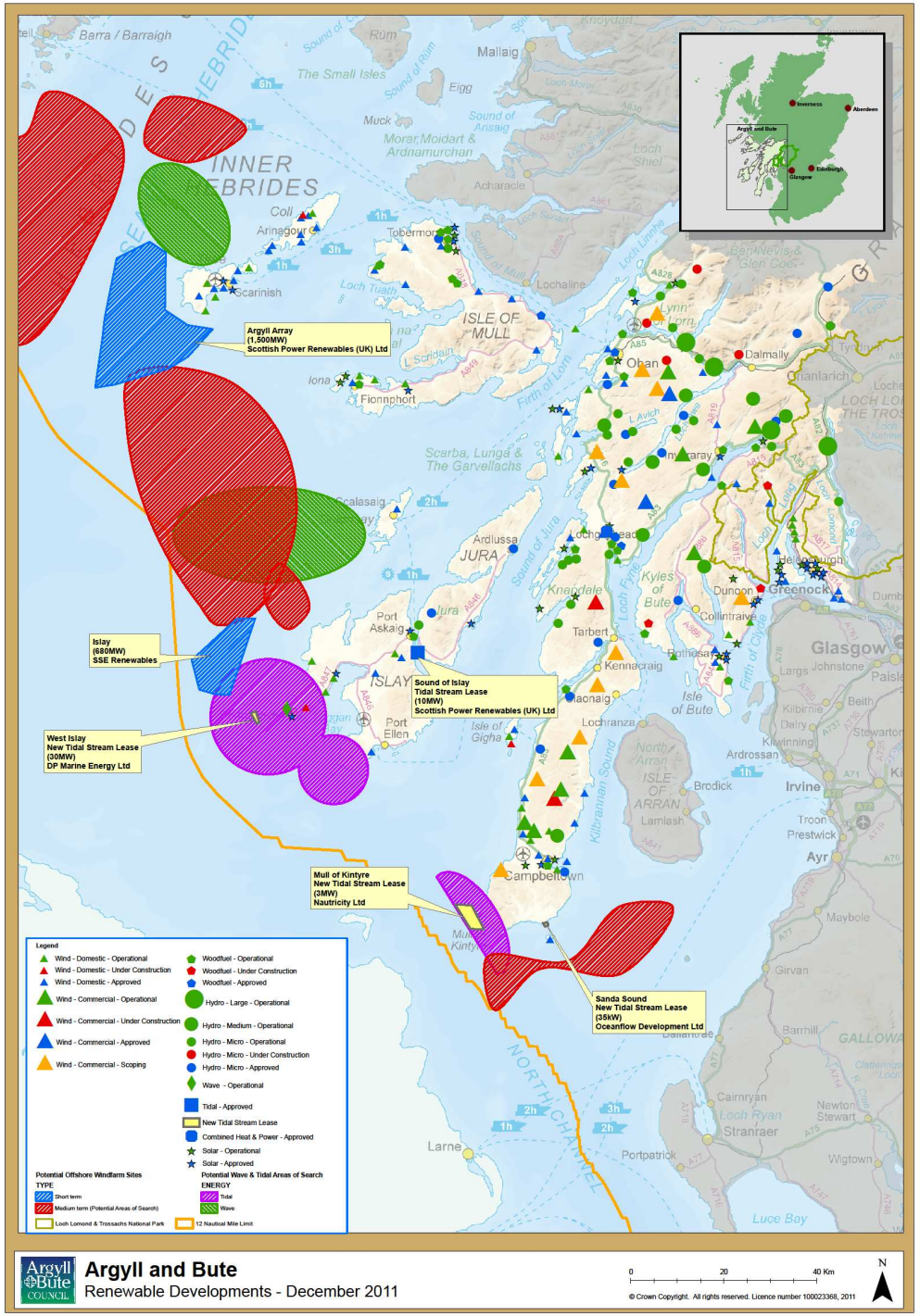
Vision

"Argyll and Bute will be at the heart of renewable energy development in Scotland by taking full advantage of its unique and significant mix of indigenous renewable resources and maximising the opportunities for sustainable economic growth for the benefit of its communities and Scotland."




Delivering REAP




Argyll Array
(1,500MW)
Scottish Power Renewables (UK) Ltd
Islay
(680MW)
SSE Renewables
West Islay
New Tidal Stream Lease
(30MW)
DP Marine Energy Ltd
Sound of Islay
Tidal Stream Lease
(10MW)
Scottish Power Renewables (UK) Ltd
Mull of Kintyre
New Tidal Stream Lease
(3MW)
Nautricity Ltd
Sanda Sound
New Tidal Stream Lease
(35kW)
Oceanflow Development Ltd
Legend
Wind - Domestic - Operational
Wind - Domestic - Under Construction
Wind - Domestic - Approved
Wind - Commercial - Operational
Wind - Commercial - Under Construction
Wind - Commercial - Approved
Wind - Commercial - Scoping
Woodfuel - Operational
Woodfuel - Under Construction
Woodfuel - Approved
Hydro - Large - Operational
Hydro - Medium - Operational
Hydro - Micro - Operational
Hydro - Micro - Under Construction
Hydro - Micro - Approved
Wave - Operational
Tidal - Approved
New Tidal Stream Lease
Combined Heat & Power - Approved
Solar - Operational
Solar - Approved
Potential Offshore Windfarm Sites
TYPE
Short term
Medium term (Potential Areas of Search)
Loch Lomond & Trossachs National Park
Potential Wave & Tidal Areas of Search
ENERGY
Tidal
Wave
12 Nautical Mile Limit
Argyll and Bute
Renewable Developments - December 2011
0
20
40 Km
N
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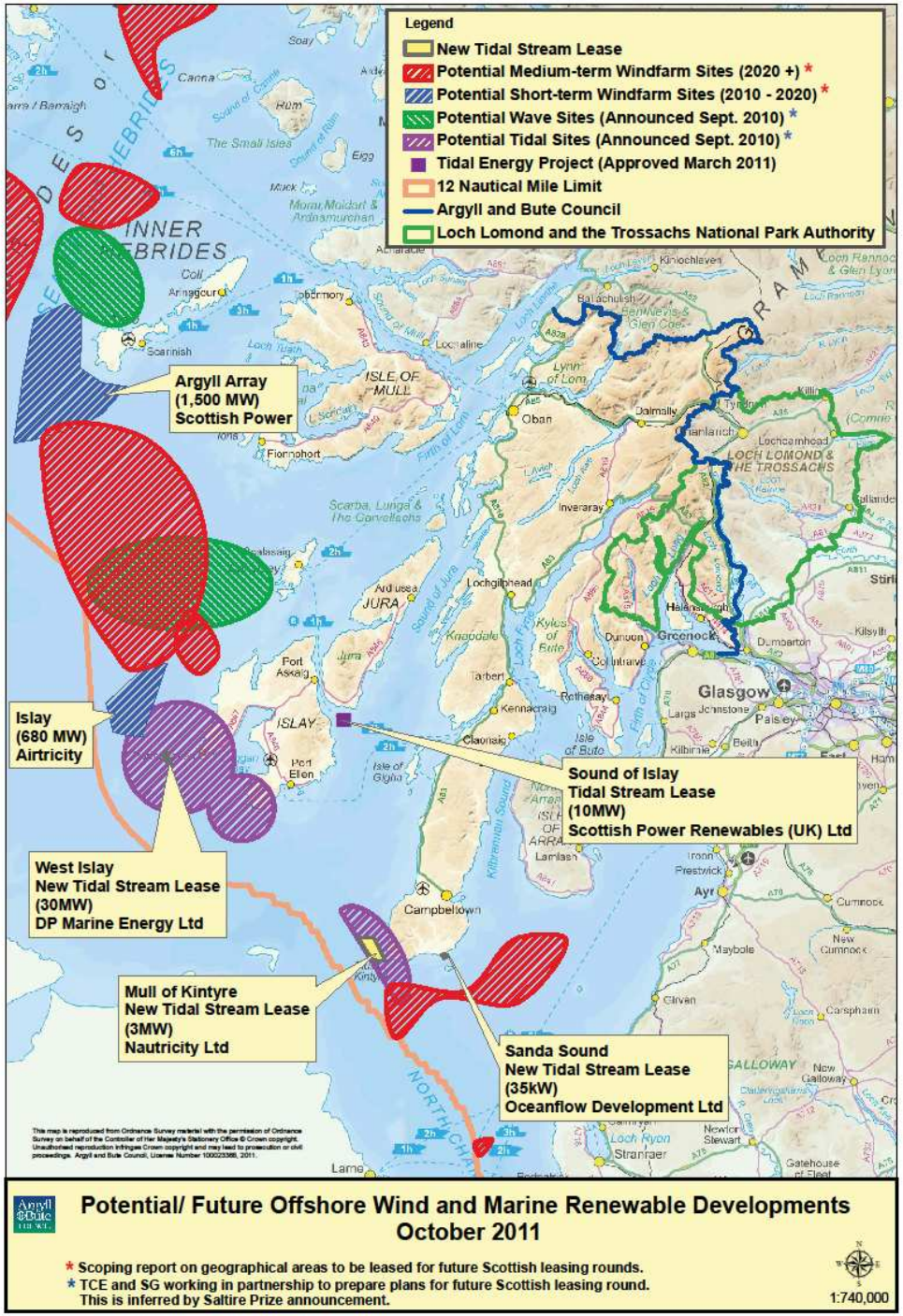
Legend
New Tidal Stream Lease
Potential Medium-term Windfarm Sites (2020 +) *
Potential Short-term Windfarm Sites (2010 - 2020) *
Potential Wave Sites (Announced Sept. 2010) *
Potential Tidal Sites (Announced Sept. 2010) *
Tidal Energy Project (Approved March 2011)
12 Nautical Mile Limit
Argyll and Bute Council
Loch Lomond and the Trossachs National Park Authority
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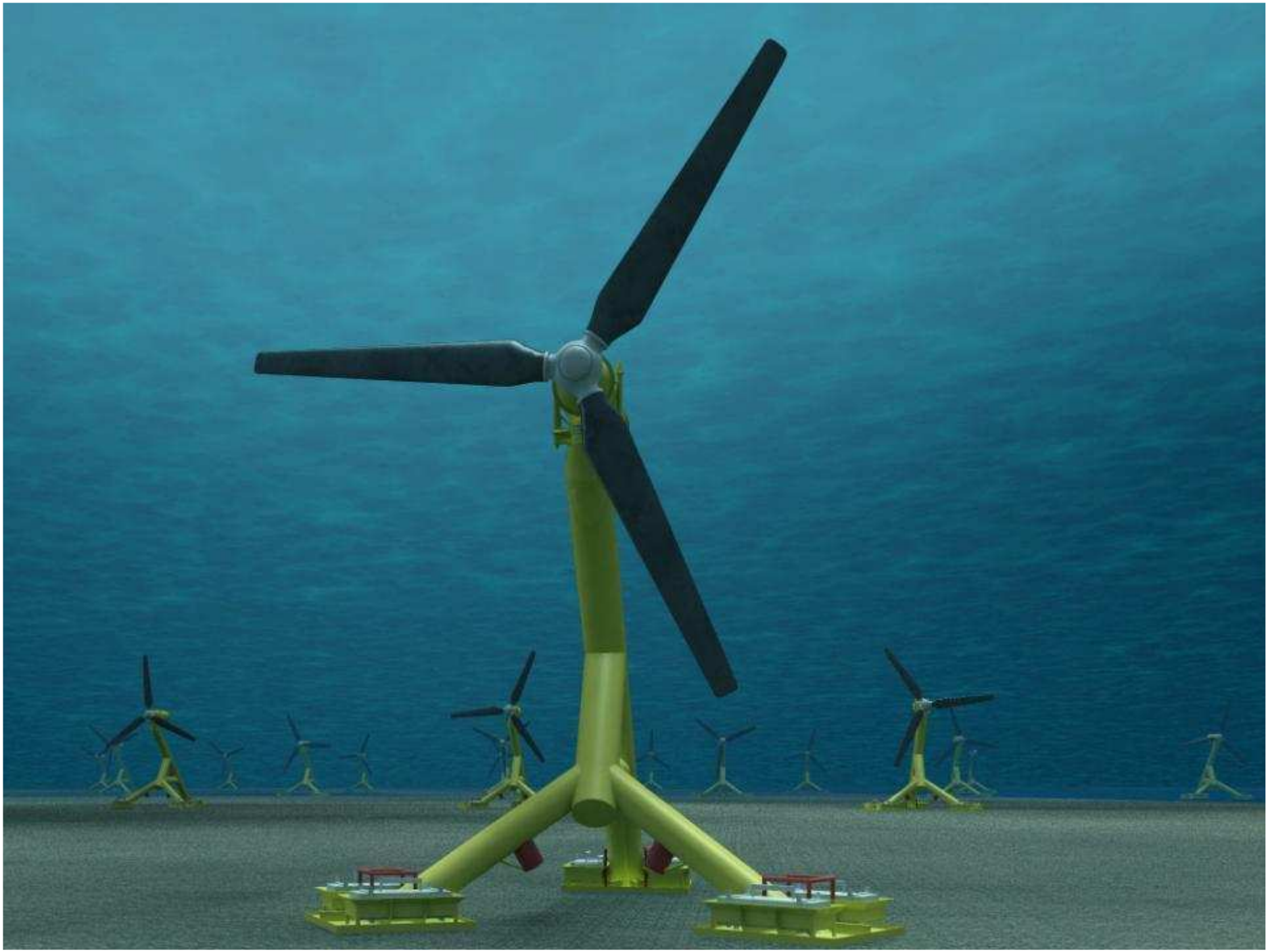
(35kW)
Oceanflow Development Ltd
Potential/ Future Offshore Wind and Marine Renewable Developments
October 2011
* Scoping report on geographical areas to be leased for future Scottish leasing rounds.
* TCE and SG working in partnership to prepare plans for future Scottish leasing round.
This is inferred by Saltire Prize announcement.
1:740,000

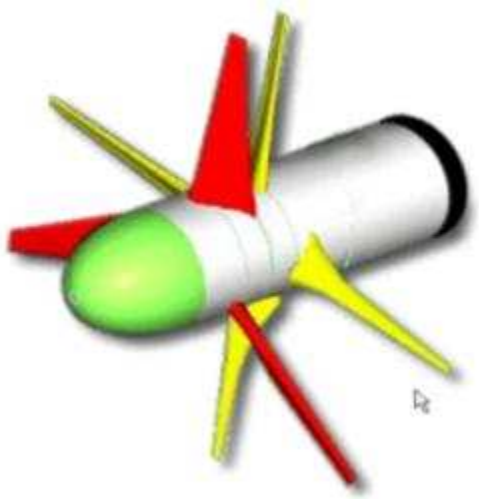
World's First Tidal Power Array in the Sound of Islay

- Installation by SPR of 10 x1MW tidal turbines during the period 2013- 2015
- Developed by Hammerfest Strøm in partnership with SPR
- Successful installation and testing of the 1MW device at the EMEC in Orkney in December 2012



Oceanflow Tidal Stream Turbine Test Project in Sound of Sanda

Nautricity and Argyll Tidal



Mull of Kintyre – Investigating up to 6 x 500kw tidal turbines, known as CoRMaT

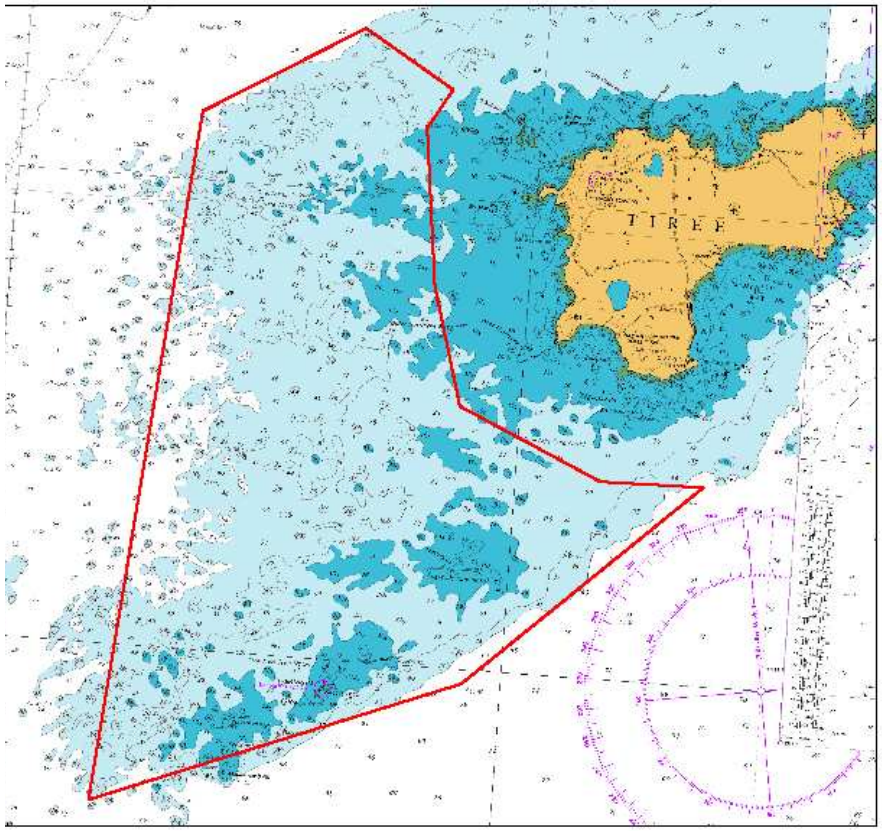
The CoRMaT is a small capsule tethered to a small surface float

"Communities

Securing socio-economic benefit for our committee and assisting the development of local renewable projects."

Source: Renewable Energy Action Plan (REAP)

Argyll Array Offshore Windfarm



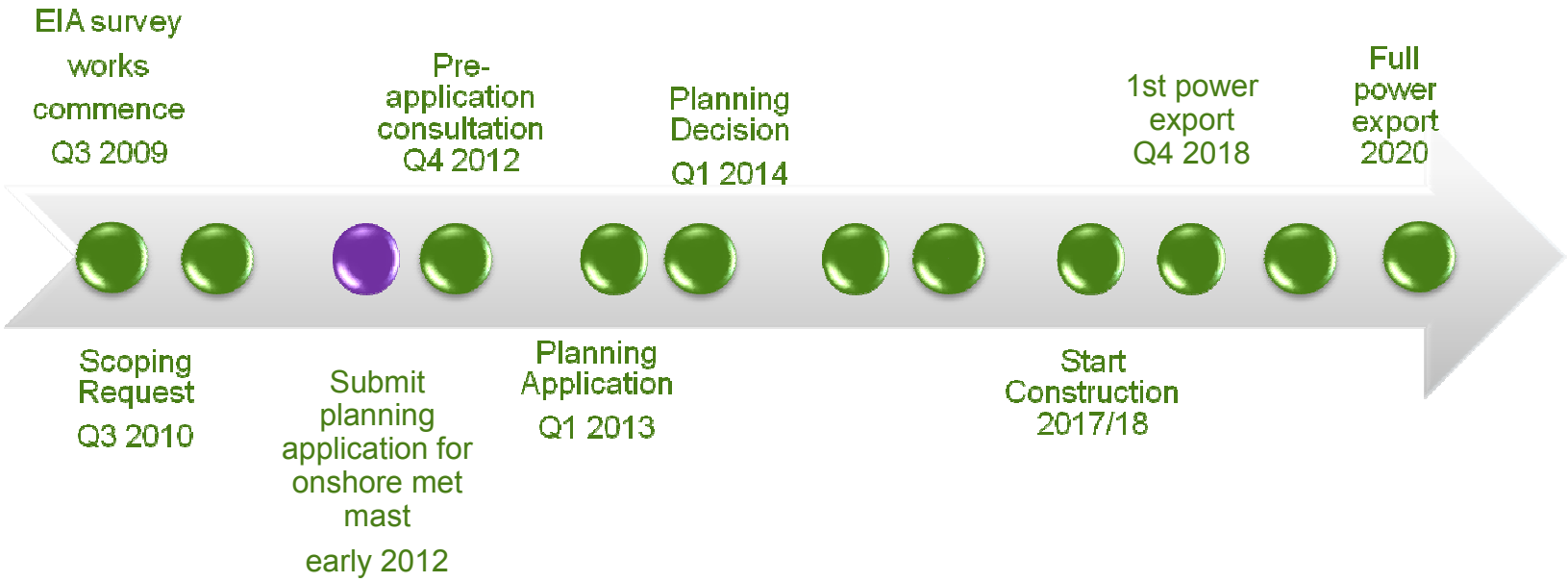
Key Facts:

- 361 km. sq
- Up to 1800MW
- Up to 300 wind turbines (at 6MW each)
- Up to 50m water depth
- Export cables(s) +150km
- Several years to build
- 1000MW grid connection to Dalmally signed

Potential for significant investment in Scotland and direct jobs to Argyll:

- Infrastructure
- Manufacturing / Construction
- 25 - 50 years operations/ maintenance (+100 direct jobs)
- Service/ support

Argyll Array Project Timeline



Project Brief

The purpose of the study is to consider the onshore implications of the proposed offshore array for the community of Tiree. The study is being funded by Marine Scotland, The Crown Estate, Argyll and Bute Council and Highlands and Islands Enterprise.

Offshore windfarms have operational and maintenance (O&M) needs which typically include a level of land-based development. This study will help assist the Steering Group, community and stakeholders in considering any potential land-based implications associated with the proposed offshore array

Community Consultation

Consultation has been central to the process - and has involved:

- Consultation Event 1 - Understanding Local Issues & Concerns Aug 2011
- Consultation Event 2 - Initial assessment of potential O&M scenarios Oct 2011
- Consultation Event 3 - Reporting on the Draft Findings Nov 2011
- Verification Day – Consultation with key stakeholders Nov 2011
- Development of web pages on Council website - Consultation information posted on website, minutes of steering group meetings and consultants brief and tender document
- 206 attendees, 36 Business One to One and stakeholder consultation including Tiree Association
- The Draft report to be issued for a 6 week consultation period commencing Friday 16th March

FOCUS

Seeking to understand Scenarios and implications on Education / Health / Community Lifestyle

FOCUS

Benefits and Disbenefits and the balance of impact. Critical to understand actual benefit include, jobs, and community fund.

FOCUS

Critical that the community remains involved and understands when key decisions will be made.

The Steering Group

Argyll and Bute Council is working in partnership with a number of organisations together referred to as the project Steering Group. Argyll and Bute Council are the chair of the Steering Group. The project funders are: Argyll & Bute Council, The Crown Estate, Highlands & Islands Enterprise and Marine Scotland.

* SPR's main input is advisory providing information on the possible options for onshore developments if the offshore array were to be granted a license.

What is Scenario Mapping / Planning?

Scenario Planning is a tool to help stakeholders and others better understand the implications of change and assist consultation on how to manage potential futures more effectively.

The scenario planning process can be used to highlight:

- Principal factors that create or drive change e.g. jobs, people, demand for services
- Provides based on percentage assumptions a better understanding of the range of change that might occur e.g. population growth / proportion of local versus new jobs

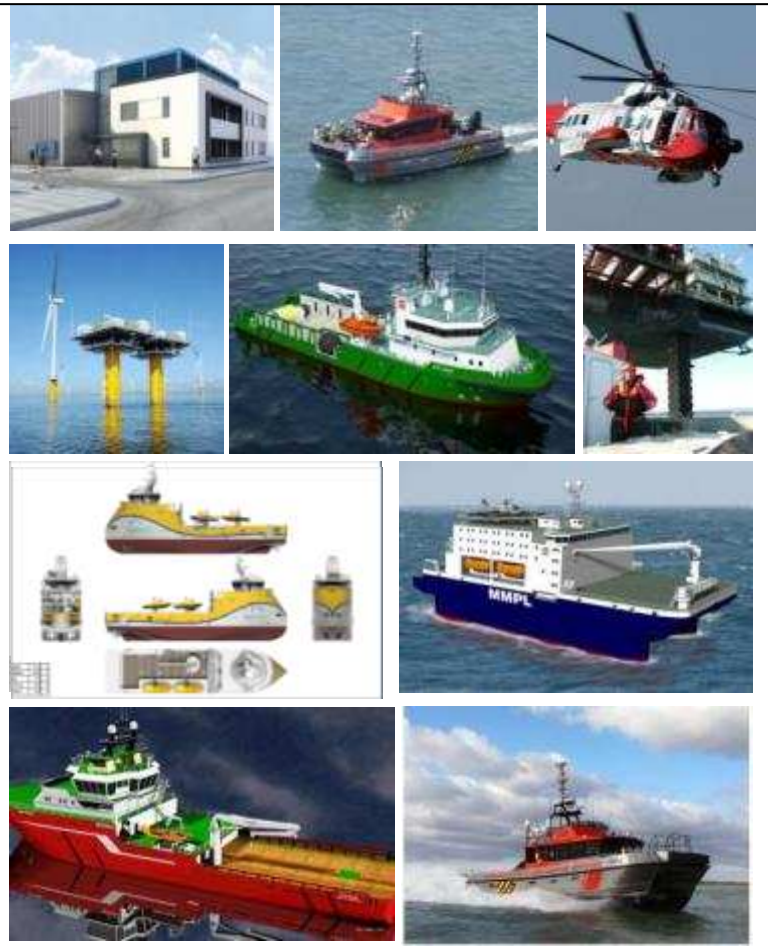
Scenarios are widely used by various organisations and groups to assess change and help to inform views and future decisions.

O&M Requirements

The offshore array developer has identified four separate possible scenarios relating to the Operations and Maintenance (O&M)

Key O&M Requirements are likely to include:-

- 150 O&M service jobs
- Office & Workshop Facility
- Helicopter Pad including hangar
- Harbour Facilities if Array service by smaller vessels
- Fuelling facilities
- Housing for locally resident employees
- Social & Support services



Scenario Mapping

Onshore O&M Base
An onshore base would have a Tiree base operating between the O&M office and workshops, harbour and helipad.

O&M Implications for Tiree:
- significant employment
- population growth
- harbour facility

Offshore Platform
An offshore platform servicing the offshore array with connections to the mainland base for staffing and equipment.

O&M Implications for Tiree:
- very limited
- operates like North Sea Oilfield

Offshore Mothership
An offshore mothership arrangement for servicing the offshore array operating from a mainland port.

O&M Implications for Tiree:
- limited
- mothership operates from mainland base
- helicopter base on Tiree

Base & Mothership
An onshore O&M base comprising O&M office, harbour and helipad. Two motherships would use the harbour for crew changes, re-fuelling and supplies.

O&M Implications for Tiree:
- significant employment
- some population growth
- harbour facility
- wider employment access

Summary Scenario 1-4

	1 	2 	3 	4 
Jobs on Tiree				
Houses on Tiree new build				
School Pupils primary & secondary				
Built Development				
Helicopter Flights per day return flights				
Population Growth				

This information represents Ironside Farrar's initial findings and draft recommendations

= 10 jobs

= 10 houses

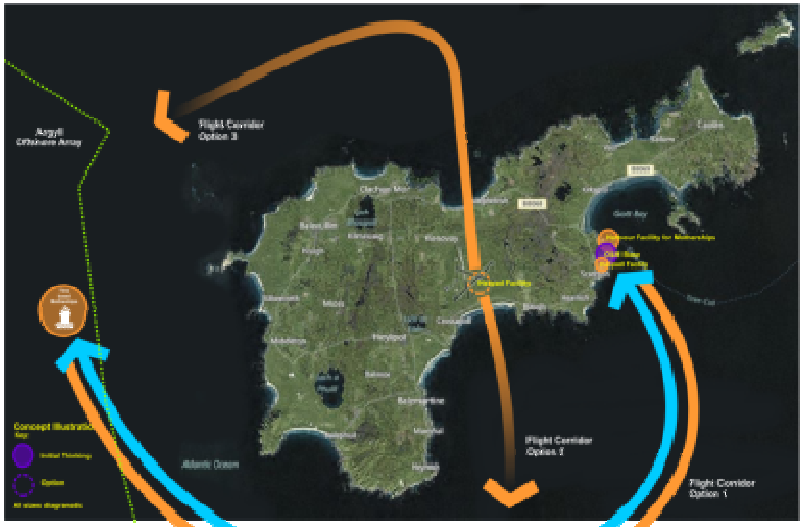
= 10 school pupils

Initial Scenario Mapping 1- 4

Scenario 1 – O&M Base

Scenario 2 – Offshore Platform

Scenario 3 – Offshore Mothership



Scenario 4 – O&M Base / Mothership

Consultation Events – Key Issues

- Local jobs & access to jobs / training / apprenticeships for young people
- Population growth with additional support for local goods and services
- Long term economic benefit to island from investment
- Concern at assurances in terms of commitment to delivery of local benefits
- Concern of O&M employment leading to displacement of local jobs/job-shares
- Environmental impacts
- Impacts of Array on tourism /environment and communities
- Concern regarding Helicopter Movements / Converter Station / Harbour
- Level of Change to a 'special quality of place'

FOCUS

Benefits and Disbenefits and the balance of impact. Critical to understand actual benefit include, jobs, and community fund.

Future Steps & (O&M)

Next steps will be informed by the finalised project proposals with parallel assessments undertaken within the consenting process. Need to consider:

- Array / Operational Baseline Studies
  Need to establish environmental / wave / construction & operational parameters affecting marine servicing as part of Scheme Development
- Converter Station Design & Locational Assessment
  Converter Station decisions are important to impact and mitigation. We understand that detailed assessment will be through the EIA for the proposed Array.
- License / Planning Procurement Programme
  Need to ensure programme convergence on key consent and delivery issues
- Local Development Plan (LDP)
  Development Framework / Masterplan information to inform and develop LDP

Future Steps & Engagement

In addition linking up to wider strategic thinking regarding supporting infrastructure (physical/ business/skills) for O&M and supporting Argyll Array and future MTO O&M Requirements;

- Argyll & Bute Renewable Energy Alliance
  - Argyll Array Delivery in Context of strategy for Argyll & Bute
- Harbour Feasibility Study
  - Requirement for Scenario 1&4 and would require early study and delivery
- Advance Skills and Training Programme
  - Advance Initiative required linking Skills /Training with future need with 3-4 year lead time with key partners
- Community Benefit Review
  - Framework for Coastal Communities & Tiree Community Benefits. Need to continue a dialogue on opportunity and issues associated with Community Benefits
- Engagement & Communications
  - Maintaining engagement activity


Argyll
Bute
COUNCIL

Community Renewable Opportunity Plan (CROP)

- Development of renewable community map and community trust fund map with links to projects/funds
- Provide links to information/assistance/funding already available to communities – one stop shop (web site)
- “Critical Friend” to allow access to services/assistance within the Council - planning
- Information on different models – equity share, outright ownership and examples of each
- Provide access to information relating to grid capacity and other associated consenting regime

Community Renewable Opportunity Plan (CROP) Questions for Community Renewable Groups

1	Your name?						
2	Your email address?						
3	Name of your organisation?						
4	Describe any renewable energy projects or initiatives your organisation has undertaken, currently developing or are considering?						
5	What stage is your project at; select one of the following a) considering, b) developing, c) implementing, d)complete						
6	Where is the location of your project?						
7	Select below the level of difficulty with each aspect of your project.						
		Very Difficult	Difficult	Neither Nor	Easy	Very Easy	Not Applicable
a	Scoping your project; i.e. deciding what type of renewables, or the size of your project, or the location of your project etc.						
b	Ensuring you had the capacity within your organisation to develop the project; i.e. was it fit for purpose, did you have to create a new legally constituted body, recruit volunteers.						
c	The development of the project as a whole; i.e. 'getting it off the ground', pulling together the different elements etc.						
d	Accessing general advice						
e	Accessing planning advice or information relating to planning (i.e. planning permission)						
f	Accessing necessary technical information and advice						
g	Accessing information relating to environmental advice i.e. impact assessments, wildlife studies etc.						
h	Access to case studies or project plans of similar projects						
i	Access to information about funding your project; both development and capital						
j	Access to actual funding to develop your project						
k	Access to capital funding for implementing your project						
l	Developing partnerships with other organisations to help you deliver your project; these organisations can be public, private, or third sector organisations.						
m	Access to information about the electricity grid i.e. how to do it, who to contact, charges, timelines etc.						
n	Connecting to the electricity grid.						