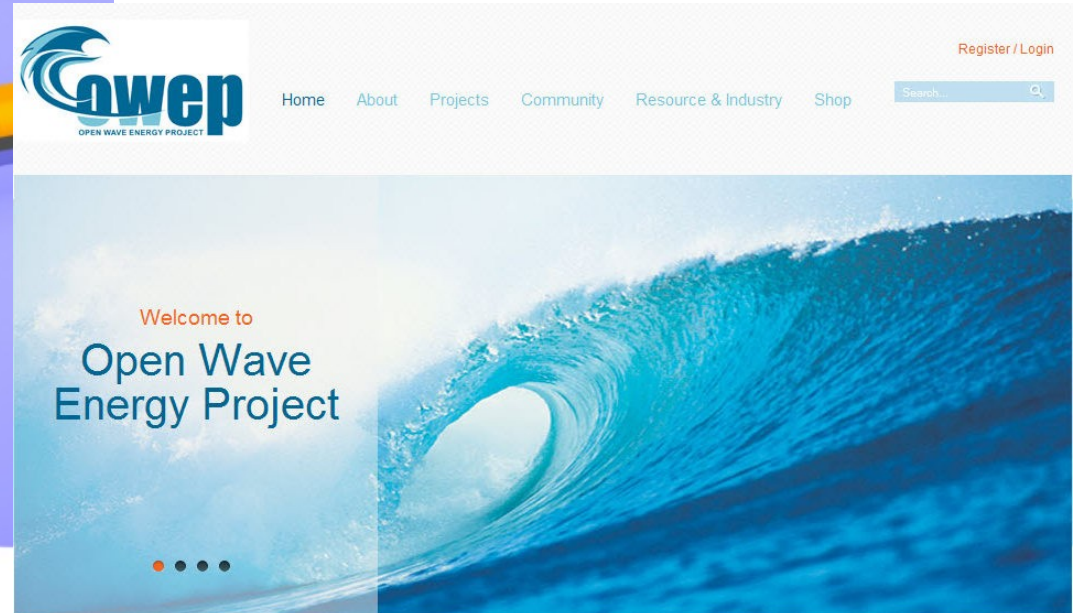
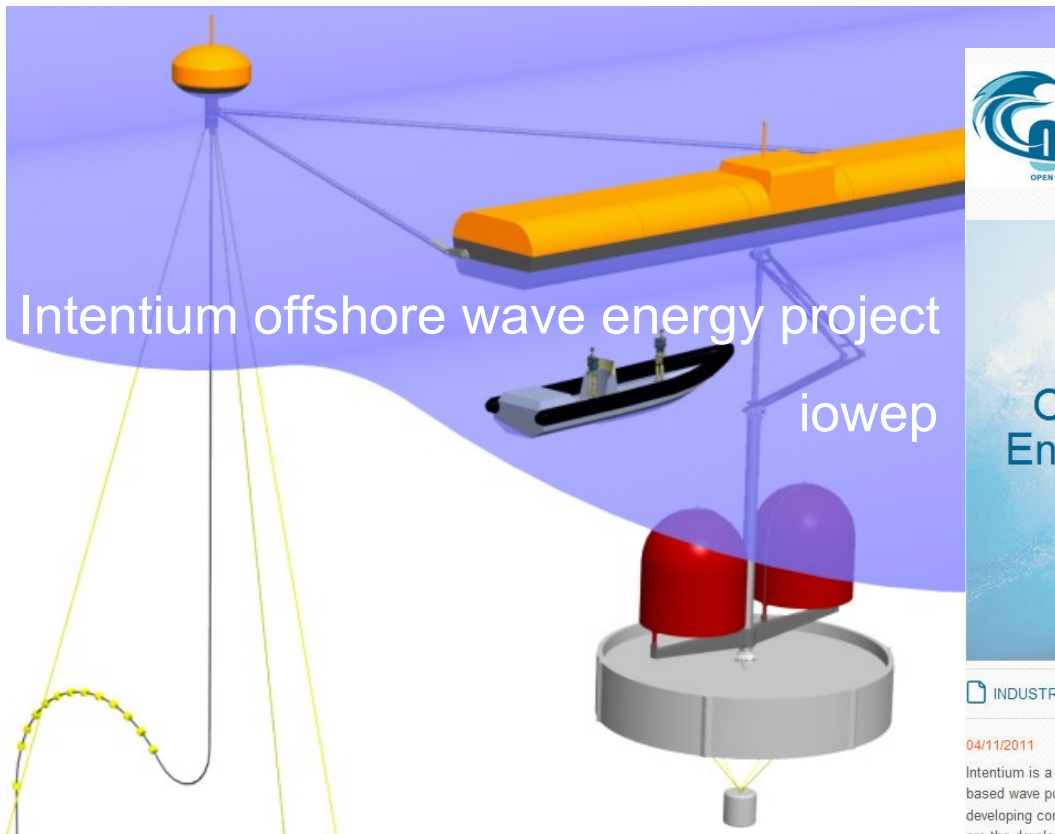


Intentium



INDUSTRY NEWS

04/11/2011

Intentium is a Norwegian based wave power developing company. We are the developers of the Intentium Offshore Wave Energy Converter. It's all about shifting from fossil fuel, to producing clean...

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OWEP NEWS



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October 24 2011

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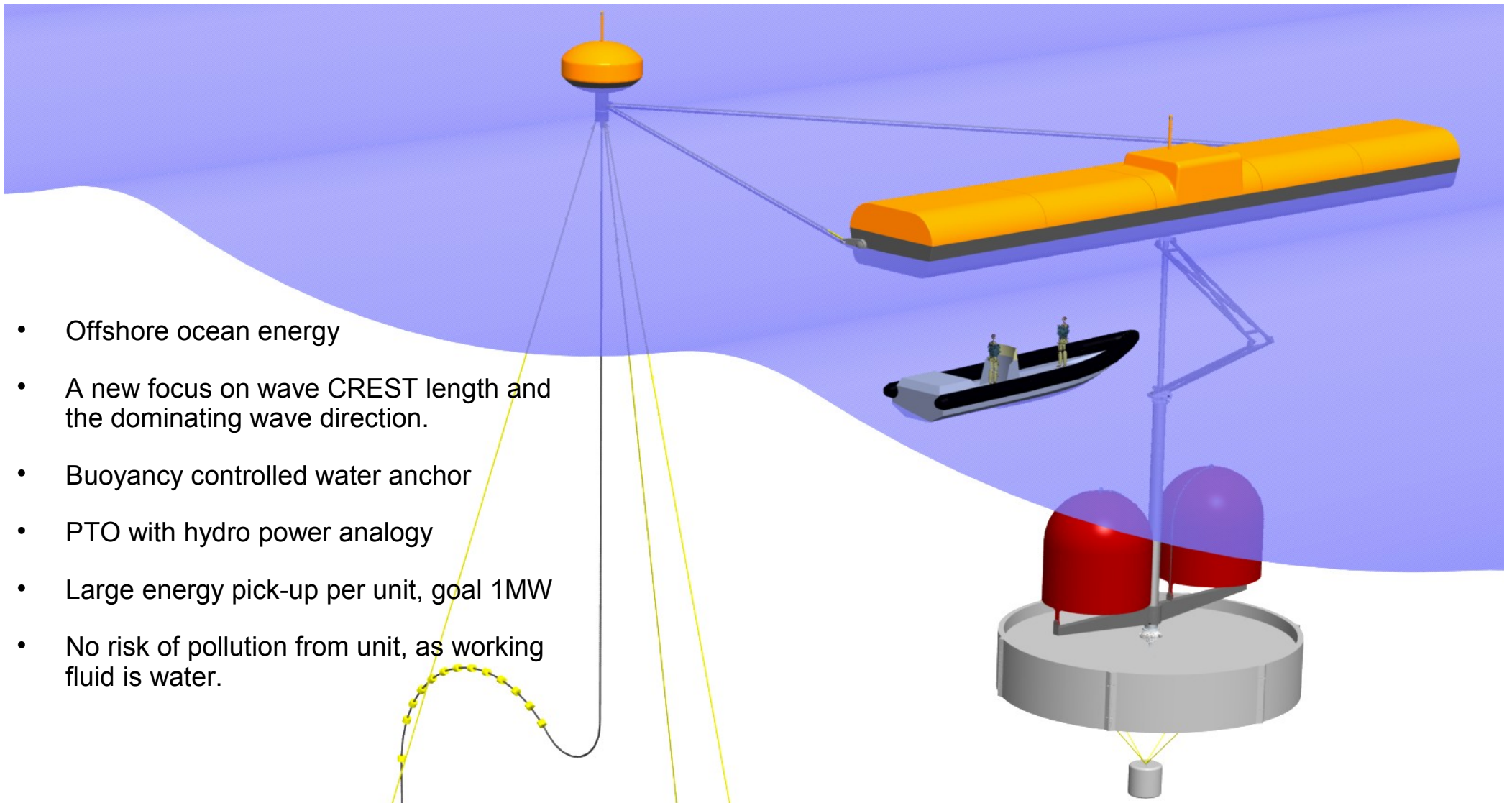
ABOUT THIS PAGE



Open wave energy project is an initiative to assist collaboration, prosperity and to boost the development of ocean energy. It is a project created by ocean energy developers, for ocean energy developers. Whether you're an innovator, decision maker, supplier, student or just above interested in sustainable marine energy, you will find this site useful.

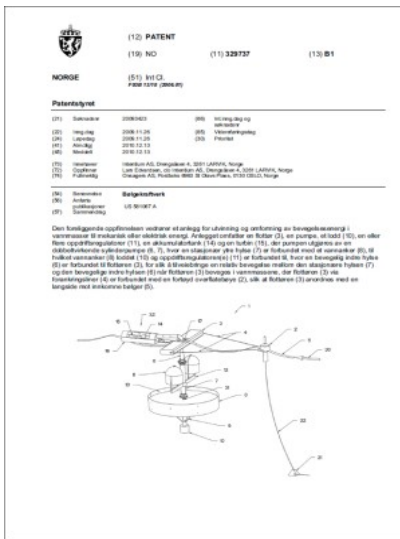


Intentionium offshore wave energy project - iowep

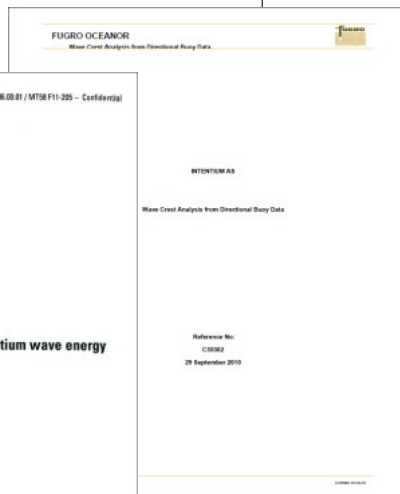
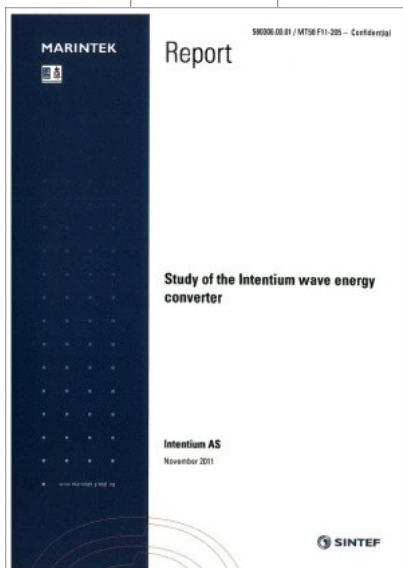


Intentium

Carried out in the project (founded 2007):



Analyse av romlige havbølgefelt
Forstudie



- In-house wave tank testing
- Innovation Norway and SkatteFunn project (IN + Research Council of Norway)
- Patent NO329737B1 goes int pat.pend.
- Communication for R&D with:
 - Wave Energy Centre – Wavec (Portugal)
 - Aalborg university (Danmark)
 - Runde Miljøsentor (Norway)
 - NTNU and SINTEF (Norway)
- Wave *crest* length statistics study by FugroOCEANOR with assistance from the NTNU Department of Mathematics.
- Numerical simulation study by SINTEF MARINTEK
- Plan to go external ocean basin testing prio 2012.

Intentionium

Highlights from SINTEF MARINTEK study on iowep

- Very new report (still warm)
- Numerical simulation linearised frequency-domain in WAMIT
- Fluid inviscid and irrotational. PTO defined as a resistive force with no loss.
- Only heave motion for power extraction.


Geometry	Sem-REV	EMEC	Lisbon	Haltenbanken	Belmullet
 1. Basis	56	94	131	183	270
2. Low	57	96	134	188	275
3. High	54	92	129	179	265
4. Narrow	46	78	108	153	222
5. Wide	65	108	152	210	315
6. Short	38	64	89	125	185
7. Long	73	125	173	244	357

Table 3. Estimates of **average** Power, P_{avg} [kW]. Installed Power typical in the order of **5 x P_{avg}** [kW]

Geometry	Sem-REV	EMEC	Lisbon	Haltenbanken	Belmullet
1. Basis	2,2	1,8	1,9	1,5	1,4
2. Low	-	1,2	1,1	1,0	0,9
3. High	2,7	2,1	2,4	1,9	2,0
4. Narrow	2,3	1,8	1,9	1,6	1,4
5. Wide	2,2	1,7	1,9	1,5	1,4
6. Short	2,3	1,8	1,9	1,6	1,4
7. Long	2,2	1,7	1,9	1,5	1,4

Table 7. Ratio average power using ***phase control***

The relative power of 0.9 for the "Low" geometry at the Belmullet site is interpreted as a result of the phase being "too good" for this low-drafted geometry. Then instead of going for perfect phase alignment, increasing the machinery loading and keeping a non-optimal phase gives better results.

Waves	Geometry	Sem-REV [%]	EMEC [%]	Lisbon [%]	Haltenbanken [%]	Belmullet [%]
Short-crested	6. Short	96	94	96	92	97
Short-crested	1. Basis	92	88	92	86	94
Short-crested	7. Long	88	82	88	79	90

Table 6. Ratio of average annual power absorption with and without ***wave spreading*** taken into account.

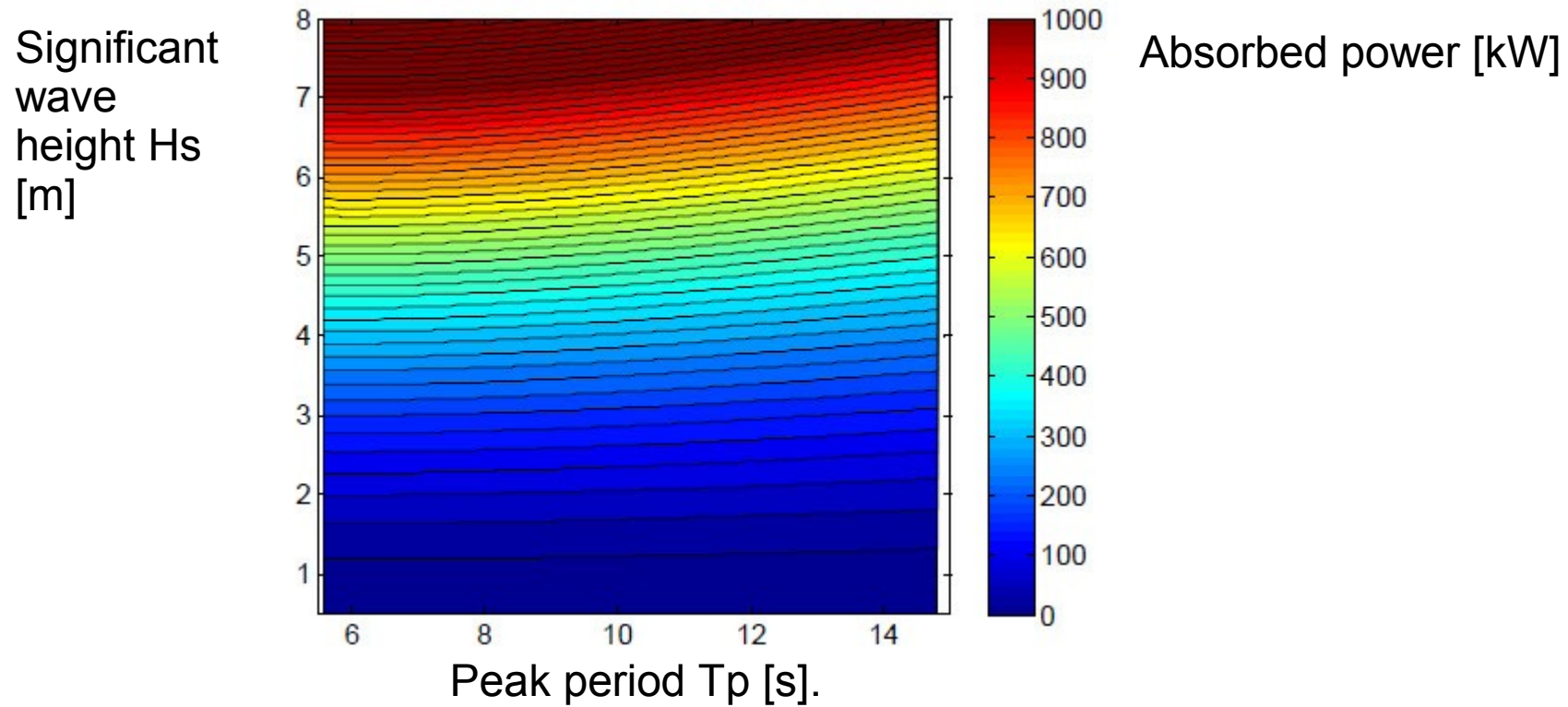


Figure 9. Power matrix for the **basic** geometry **no** phase control

Welcome to
**Open Wave
Energy Project**



Being in our fifth year, one clear thought arises:

The traditional path through the valley of renewable-energy-startup-death, may not be the optimal one.

Could we get more with more collaboration?

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A closer relation with local competence – build on motivation and inspiration

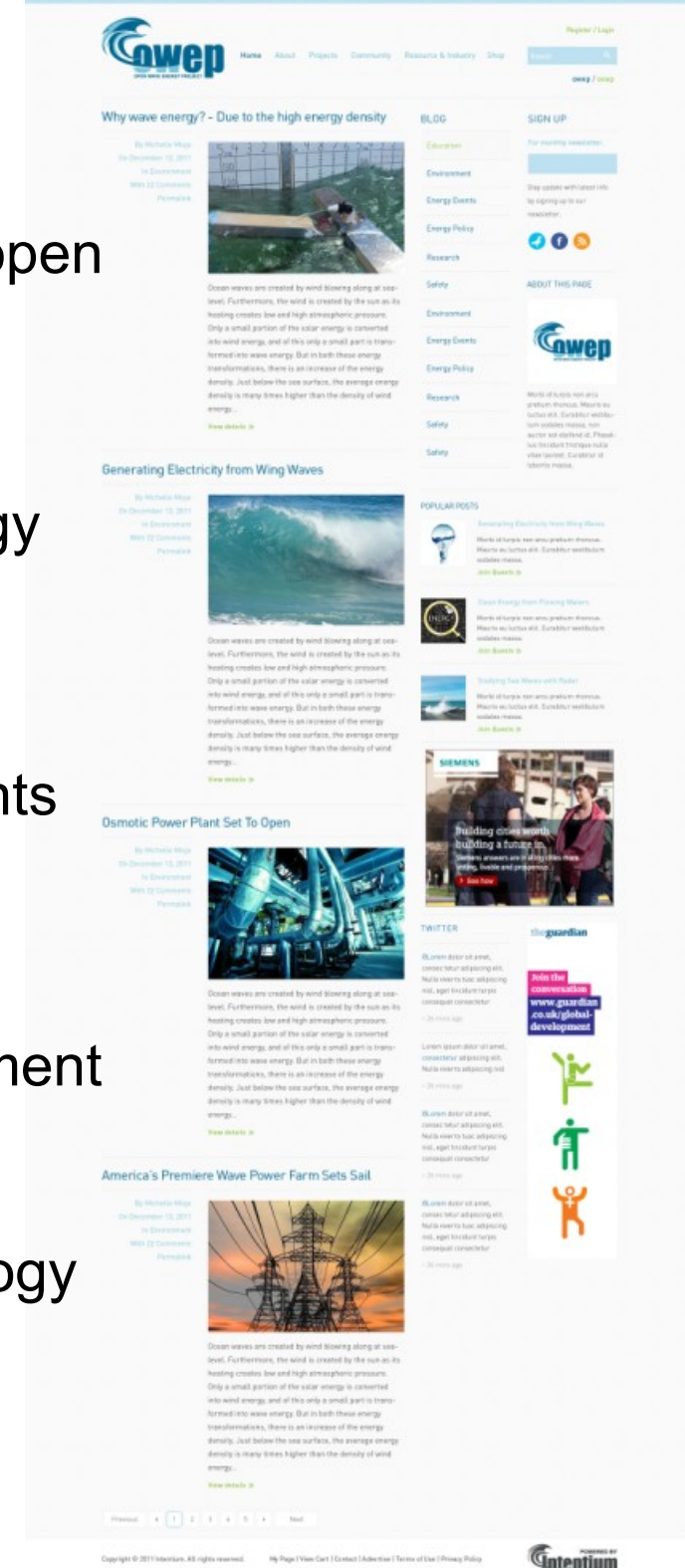
A closer relation with external centers of excellence – build network and expertise

"Ocean is big and challenge is endless" – there should be room in the industry to all who are willing to commit.



- An initiative to increase collaboration, inspired by the open source movement
- Created by ocean energy developers, for ocean energy developers
- A hub where also decision makers, suppliers or students can involve themselves
- Publish your own project or request for others involvement
- Intentionum will publish results, and most of our technology from iowep in this site

T



El Hierro, yesterday:



www.intentium.com

www.owep.no

Thanks for your attention!