





FRANK NEUMANN, IMIEU

Reaction on: "The potential of Osmotic Energy to produce clean permanent electricity and green hydrogen: Accelerating the European Union's energy transition"

> 5th July 2022 13:00-14:30 CET **P** Strasbourg







Who we are

- Development of demonstration projects according to the Paris Agreement & SDG's-Maritime Innovations, Osmotic Energy-Sustainable (Aviation) Transport.
- Advice and Mediation for Infrastructure Projects.
- Sustainable Finance, Equity Search, advice on voluntary carbon credit market.





OSMOTIC ENERGY

Power generation by

- mixing salt and fresh water or
- mixing highly saline with less saline water

BENEFITS OF OSMOTIC ENERGY:

- *'Base load' and 'dispatch' power* (complementing wind and solar) provision, performance constant, not varying as solar/wind
- *Discrete presence*' in the landscape, low buildings or claiming lot of land, no high constructions, low noise/



BENEFITS OF OSMOTIC ENERGY:

 Energy generation form related to the local landscape, development and maintenance by local companies, creating local employment

by EVMETAL.DK

Improving the environmental performance of industries that have brine waste streams



INES-OSMOTIC ENERGY-EUROPEAN AND INTERNATIONAL NETWORK FOR ENERGY FROM SALNITY GRADIENT POWER-

CORE ACTIVITY

'FACILITATING THE UPSCALING OF OSMOTIC ENERGY BY EXCHANGE OF EXPERIENCES BETWEEN PILOT PROJECTS, CO-OPERATION ONKEY CHALLENGES, FUNDING SEARCH' AIDING THE LAB-TO-MARKET TRAJECTORY



INES – INTERNATIONAL AND EUROPEAN CO-OPERATION ON ENERGY FROM SALINITY GRADIENT POWER-ACTIVITIES



European Commission

OSMOTIC ENERGY PROJECTS ALREADY FINANCED BY THE EUROPEAN UNION (OVER 80 MLN EURO 2012-2022)



IJSSEL MEER /FRESH WATER/WFD AND NATURA 2000 SITE



Pro-

Wadden Sea (Unesco



The first commercial plant to be erected at SaltPower/Nobian/Dansk Salt A/S Industrial Brine from Salt Production, Fresh Water from internal process water



UNIPA/ResourSEAS







COMMON CHALLENGES/ LESSONS FOR NEW INITIATIVES





DEALING WITH LARGE VOLUMES OF WATER PASSING THROUGH THE SYSTEM/MEMBRANES VERY FAST – LARGE DIFFERENCE BETWEEN LAB PERFORMANCE & PERFORMANCE WITH 'REAL' WATERS WITH HIGH FLOW RATES!,

- DIFFERENCE IN WATER COMPOSITION AND CHARACTERISTICS PER SITE/ i.e. Presence of Clay, different type of minerals and metals, temperature and fluctuation
- HIGH QUALITY /LOW COST MEMBRANE PRODUCTION





CURRENT AND PROPOSED EU POLICY AND REGULATION OFFERS NEW STIMULUS FOR LAB-TO MARKET SPURT!



- Osmotic Energy Amendments

 (a.o. 275, 337, 354, 1262) to the
 Renewable Energy Directive.
- <u>REPowerEU- Enhanced</u> promotion of energy efficiency and renewables





In all Member States Osmotic Energy ought to be further investigated:

- What is feasible?
- What technology(ies) fits best to the type of water resources and industrial brines of the Member State/ Local situation
- Identifying sites, testing and demo's, joint collaboration, exchanging information on pilot projects
- INES -Report/Inventory for EU DG GROW



Contact info and upcoming events:

• 26 September– European Sustainable Energy Week

Osmotic Energy Seminar

- Linkedin Profile: <u>https://www.linkedin.com/company/inesplatform</u>
- MORE INFORMATION:
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