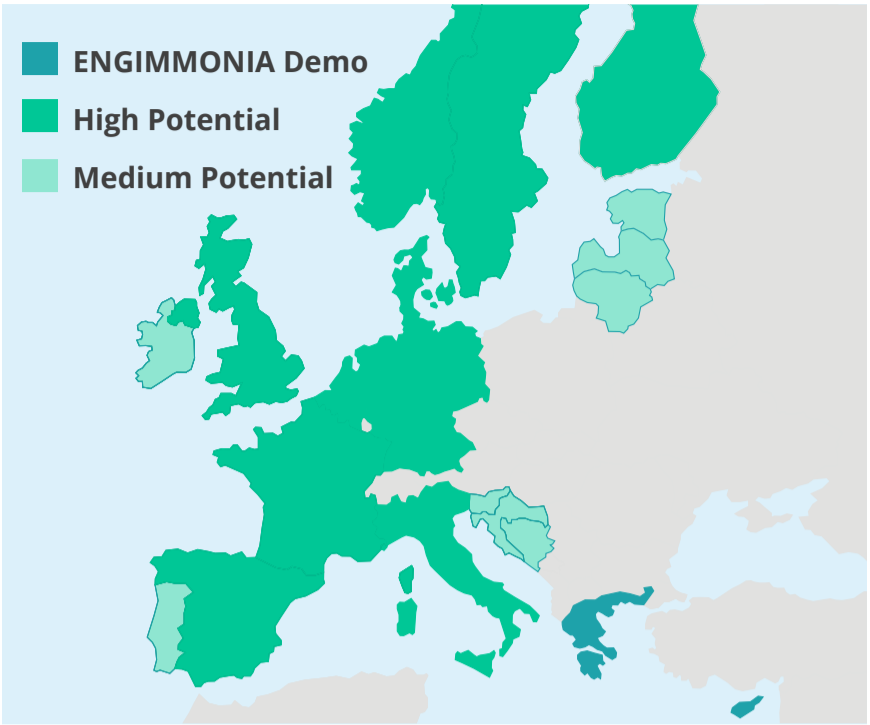


KEY EXPOITABLE RESULTS	TRL
Ammonia Engine	3/4
N2O EATS	3/4
Compact ORC Unit	5
Compact Adsorption Chiller	5
PV Composite Surface	5
On-board energy management & optimization	5/6

KEY EXPOITABLE RESULTS	TRL
Ammonia Engine	4/5
N2O EATS	4/5
Compact ORC Unit	6
Compact Adsorption Chiller	6
PV Composite Surface	6
On-board energy management & optimization	6/7

KEY EXPOITABLE RESULTS	TRL
Ammonia Engine	5/6
N2O EATS	5/6
Compact ORC Unit	7
Compact Adsorption Chiller	7
PV Composite Surface	6/7
On-board energy management & optimization	7/8



**DEMO APPLICATIONS**

Oil tanker, Shipping, Ferry

PROJECT STARTS



PROJECT ENDS

- PROJECT DRIVERS**
- Maritime and Shipping sectors have to heavily reduce their emissions
  - Ambitious IMO and EC targets
  - Alternative fuels more and more promoted by IMO, IACS, EC
  - RES more and more widespread in EU and stored via power-to-fuel systems

- TECHNOLOGICAL BARRIERS:**
- Full reliability of ammonia DF engines
  - Reduce the manufacturing costs of Engines and ammonia storage system
  - Easy management of refueling and Ammonia-management procedures
  - Complete integration on board in terms of space and ship electric/HVAC architecture inter-operability of the ENGIMMONIA clean energy technologies

- NON TECHNOLOGICAL BARRIERS:**
- Definition of best practices and measures for the sizing, location and installation on board of ENGIMMONIA Clean energy solutions
  - Naval classification and flag authority permit to sail in more EU countries
  - Health and Safety Certification for the system
  - Increase social acceptability also via dedicated policies/supporting schemes (not only in naval sector)

- FURTHER DEMONSTRATIONS & MARKETING**
- Demonstration of ammonia DF engine on board of a real vessel
  - Demonstration of the ENGIMMONIA Solutions Interoperability/on-board integration in large scale and in different ship purposes
  - Demonstration of different refueling procedures and widespread of ammonia refuelling infrastructure
  - Selection of the first entry markets: Greece, Netherlands, Germany, Scandinavia, Denmark, Spain, Italy etc.
  - Promotion in Nautical sector (especially for PV surface and energy management optimization)

**ADDITIONAL MARKET**

All type of short sea Long distance shipping

Nautical Sector

