An overview of hybrid, electric, and solar boats market in France

Paper number 9160691
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The French Association for Electric Boats

Created in 1994 - Currently 55 members.

**AFBE : multiple objectives**
- Promote the conception, construction and use of electric boats.
- Achieve clean transportation and enhance the development of sustainable mobility
- Preserve the ecosystem and ensure clean fluvial yachting
- Innovate to develop an eco-boating

**AFBE : concrete actions**
- Innovate to develop eco-boating, information events, studies.
- Unify and federate the players in this sector
- Act as representative spokesman with governmental authorities.

www.bateau-electrique.com
Electric boats: a long story!

EUREKA - the first electric boat built in 1881 by the French chemist engineer Gustave Trouve!
Normandie, Queen Mary 2, submarines are electric powered!

Several market segments identified.
More than 4500 E-boats operating in France
- Spare-time activity business.
- Attractive solution for public transportation
- Beginning of E-boat service applications

Up to now technology is available!
Environmental and economical assets of electricity as a fuel
An electric boat is defined as a boat without emission for at least 50% of his travel time.

- Electricity must be identified as the main source of energy to propel the boat (battery, solar panel, hybrid)
- Precise definition of the daily uses & needs
- Energy production and storage
- Diesel electric – Battery pack – Solar panels – Full cells
**Electrical or Hybrid**

- ODC Marine has optimized Boats for maritime or closed waters
- Boats are in operations in Sete, Brest, Marseille, Evian, Paris or Corsica
- In robust but light recyclable aluminum,
- With 2500 cycles and safe Lithium Batteries.

### Electrical:
Simple and no emission 6 hours autonomy.

### Hybrid:
High speed, long distance.
Clean where important.
ODC Marine - Innovative shipyard has built 40 vessels so far

2009: First time WW lithium batteries propulsion for passengers transport. 50 passengers 11m
2011: Fast electrical catamaran. 54 Passengers 15m
2012: First hybrid passenger boat. 100 Passengers 18m

ODC Marine Offers a range from 12 to 200 passengers Electrical or Hybrid.

Welcome to www.ODCMarine.com
Zero Emission Water Shuttles

- An experience of 15 years
- Ten boats operating in Paris, Marseille, La Rochelle, Les Sables, Cognac
- Two millions passengers / years
- Totalize sixty years of daily exploitation
We use the highest technologies:
• Hydrodynamic efficiency
• Light weight structures
• High efficient and lightest energy-propulsion system
• Whole Supervision System and Remote Control

In order to provide:
• Autonomy: up to 16 hours / day
• Reliability: up to 4000 hours / years
• Silent: less than 50 dbs inside passengers’ cabin
• Cost effectiveness
Swiss engineering company developing solar powered boats for professional use with a proven track record: over 40 units, some in operation for more than 15 years
Grove Boats – Products and services

1. Aquabus: passenger transport 10-100 pax
2. Solar Sea Cleaner: debris cleaner
3. Electric motors: own developments and 3rd party distribution

We also provide consulting services and develop new products for professional boat operators, for the tourism and collective transport industry.

Visit us on www.grove-boats.com
Conclusions

The market needs some actions:
Norme ISO CEI TC16315 - Small craft – Electrical propulsion system
Incentives actions at local, national and EU levels
A wide networking to exchange data

The environmental quality of Eboats is a major asset, upon condition that the expected levels of performance, cost, comfort and safety are reached.

Thanks for your attention
You are welcome to meet us at our stand