



Designing Future

Solar Vessels for the Green Planet...for the next generations

Croatia

Thousand Island

Thin Network



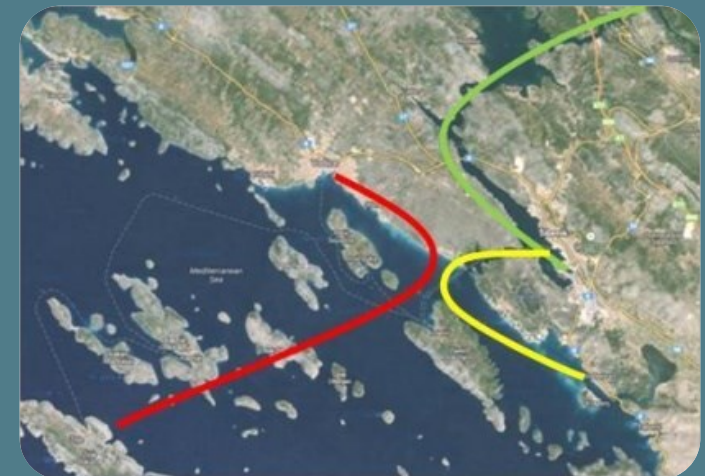
Market Innovation or just an Innovation

- Sustainable maritime transportation
- High speed vessels
- Frequent sailing schedule
- “Green” solutions

iCat

Sustainable development through the innovation – thinking “green”

- 2007** ● – *Project idea*
- 2010** ● – *Partnership with University of Zagreb*
- 2011** ● – *iCat company has been set-up*
- 2012** ● – *Patent „GRP integrated solar cells” granted*
- 2013** ●
 - *Partnership with Končar Institute*
 - *Ministry of Economy Entrepreneurship and Crafts nominated iCat to the EU Commission as flag ship project*
 - *iCat project has been supported by the Ministry of Sea, Transport and Infrastructure*
- 2015** ● – *For the City of Šibenik a new model of transportation system, “Šibenik Boat Lines”, has been created*



2016

- Contract signed with National park Mljet for 3 solarCat vessels
- EU project “SolarCat” awarded

2017

- EU project “solarCat” awarded
- EU project “iCat International” awarded

2018

- iCat has started own production in Zagreb
- EU project “iCat shipyard” awarded
- EU project “iCat research” awarded
- “solarCat 1” has been delivered to the National park of Mljet

2019

- “solarCat 2&3” have been delivered to the National park of Mljet

2020

- EU project “iCat Technology” awarded
- “solarCat” finished and presented
- iCat awarded for contribution to the Development of Maritime and Inland Navigation Economy by the Ministry of the Sea, Transport and Infrastructure
- EY – iCat as one of 46 priority projects – A Green Covid-19 Recovery and Resilience Plan for Europe

2021

- “Autonomous electric vessel partnership with:
 - Faculty of Mechanical Engineering and Naval Architecture
 - Faculty of Electrical Engineering and Computing
 - Center of Technology Transfer
 - Innovation centre Nikola Tesla
- Energy Globe Award – 2021 National Winner



iCat Group development by the vertical integration within the sector

iCat group

iCat design

Design Office

- Project design and detailed documentation development as engineering service inhouse and for the market



iCat shipyard

Annual production

- solarCat 10x
- iCat 3x
- jumboCat 1x



iCat consulting

Consulting Service

- Consulting in marine and maritime close related to the company strategy and environmentally friendly solutions

MODERNIZACIJA FLOTE NA RIJECI SAVI



STUDIA

PROSINAC 2020 | ZAGREB

iCat line

Set-up passenger transportation lines

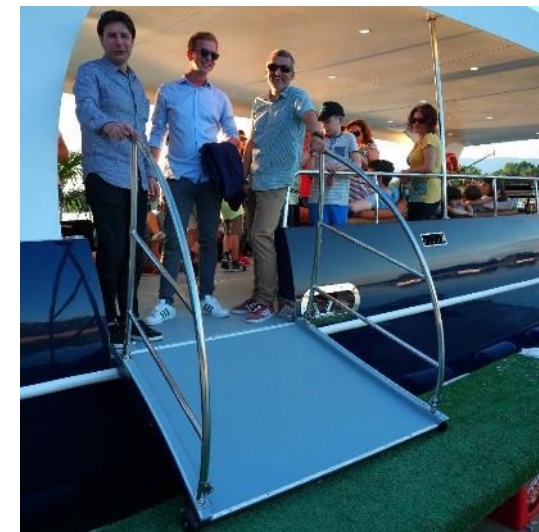
- Šibenik
- Korčula
- Hvar
- Split

2023 ?



1 solarCat

First self sustainable solar vessel in the World



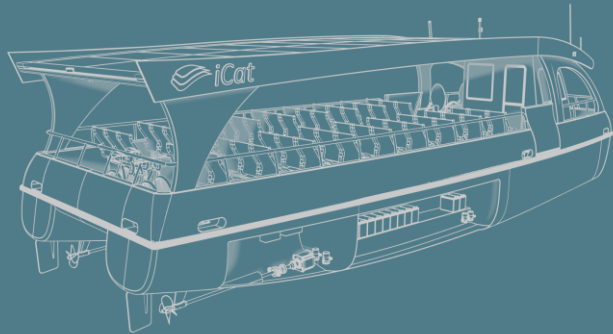
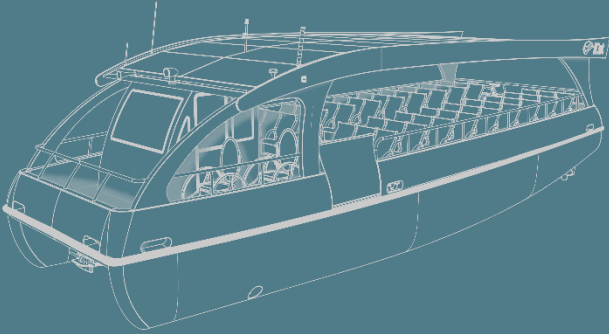
100 miles autonomy

Built in Croatia, **Made in Europe**

Designed as electric catamaran and powered by the sun, with newest technology:

- Solar Energy
- Permanent magnet electric engines
- LiFePO4 batteries
- Smart chargers
- On-line position and batteries control

Main Particulars



Solar powered passenger catamaran build in fiberglass with vacuum infusion technology

Dimensions

Length:	14,95 m
Beam:	5,00 m
Draft:	0,65

Engines and Energy

Engines:	2x12 kW permanent magnet motor (2x30 kW option)
Energy production:	8,9 kWp installed solar power
Energy storage:	2x32,3 kWh LiFePO4 main engines batteries

Crew and Passengers

Crew:	2 members
Passengers:	54 – 66 passengers
Additional space:	4 wheelchairs / 8 bikes

Speed and Autonomy

Cruising Speed:	5,5 knots (10 km/h)
Maximum Speed:	9,5 knots (17 km/h) (11 knots with 2x30 kW engines)
Autonomy:	100 NM (180 km)

solarCat – proven concept

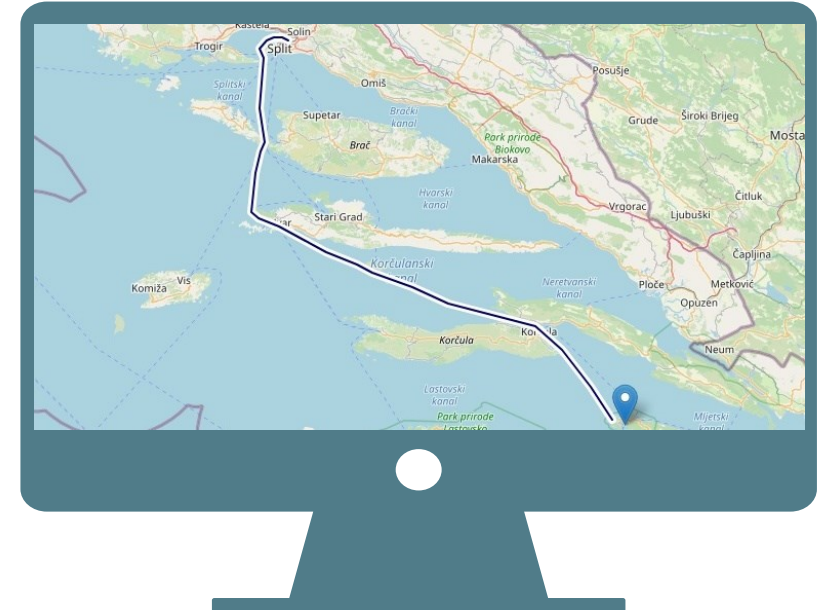
Daily autonomy – no recharging

solarCat 2 – Antun Tonko Martić

Summer 2019

Split – Mljet

- | | |
|---|-----------|
| • <i>Departure</i> | 7:30 |
| • <i>Arrival</i> | 21:00 |
| • <i>Sailing time</i> | 13:30 |
| • <i>Distance</i> | 140 km |
| • <i>Speed</i> | 10 km/h |
| • <i>Battery state of charge at arrival</i> | 50% - 60% |



solarCat 3 – Pero Sršen

Winter 2020

Split – Korčula

- | | |
|---|---------|
| • <i>Departure</i> | 7:30 |
| • <i>Arrival</i> | 19:00 |
| • <i>Sailing time</i> | 11:30 |
| • <i>Distance</i> | 115 km |
| • <i>Speed</i> | 10 km/h |
| • <i>Battery state of charge at arrival</i> | 12% |

Vienna

67.500 km of autonomy per year

Daily autonomy with solar energy:

- 85 km (9 h) @ 10 km/h
- 40 km (3 h) @ 13 km/h
- 29 km (2 h) @ 17 km/h

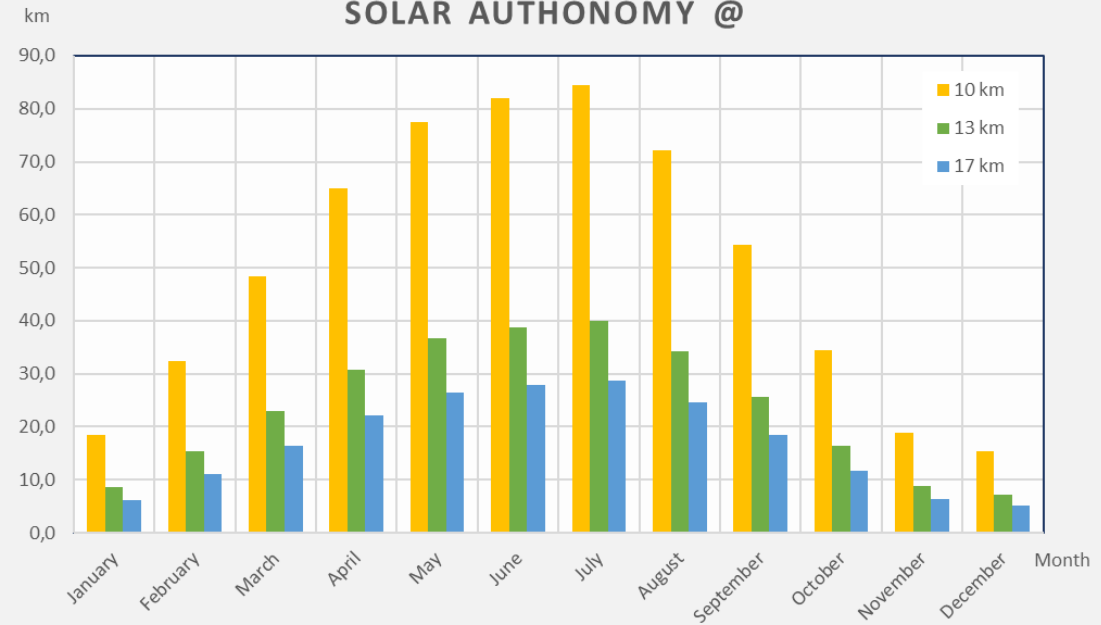
Daily autonomy with LiFePO4 batteries:

- 135 km (14 h) @ 10 km/h
- 64 km (5 h) @ 13 km/h
- 46 km (3 h) @ 17 km/h

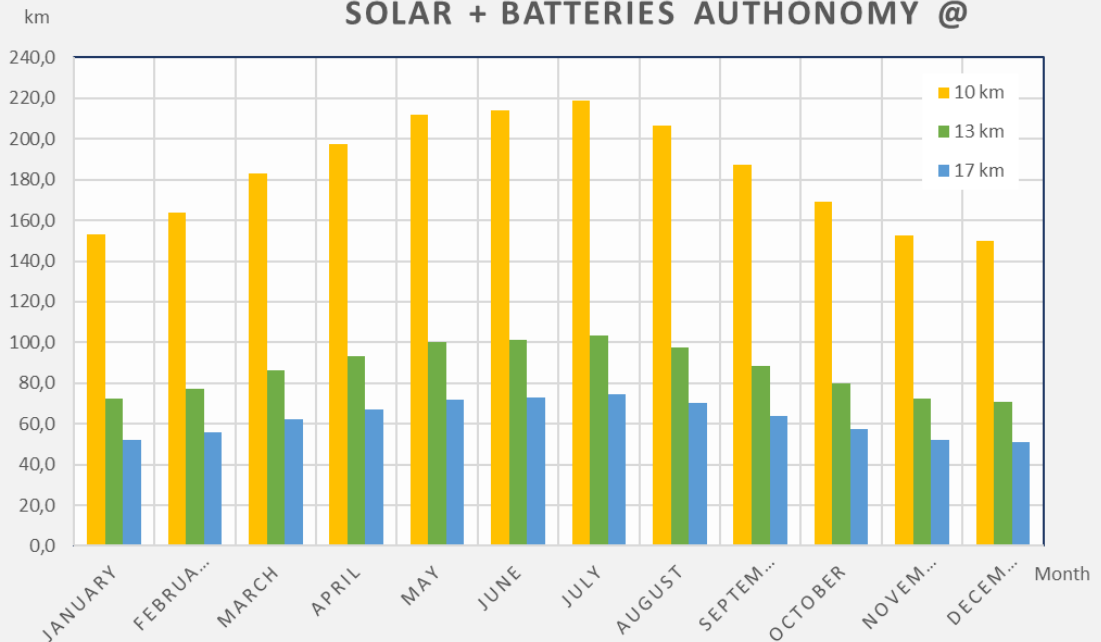
Daily autonomy combining LiFePO4 batteries & solar energy:

- **219 km (22 h) @ 10 km/h**
- 104 km (8 h) @ 13 km/h
- 74 km (4 h) @ 17 km/h

SOLAR AUTHONOMY @



SOLAR + BATTERIES AUTHONOMY @

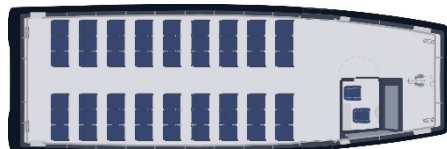


From passenger transport to party boat

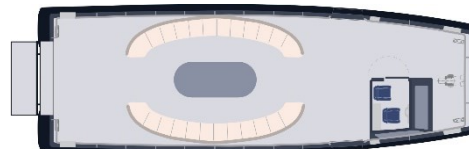


Versatile deck can be **rearranged in 30 minutes** and customized for individual needs:

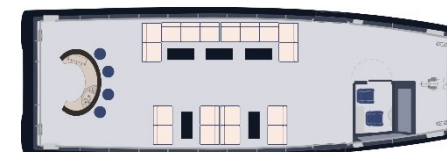
- Passenger transport
- Sport / Education
 - VIP / Party
- Bar / Restaurant



Passenger



Sport / Education



VIP / Party

1a ecoCat

Ecological waste management



Hop-on – Hop-off

Circular recycling shipping

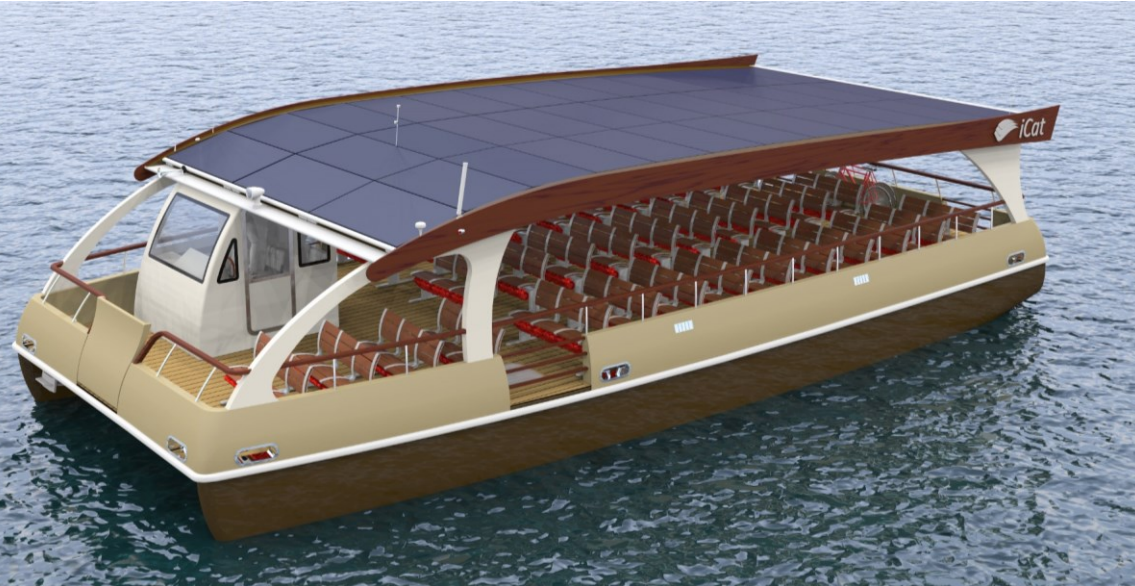
Use the existing solar ship model to collect sorted waste:

- Solar energy of ship propulsion
- Waste management on isolated locations
- Daily collection of sorted waste
- Disposal in central recycling stations



1b

solarCat – 60 passengers
solarCat XW – 100 passengers
solarCat XL – 100 passengers



solarCat platform

Forest Line

2 iCat

Fast electric ferry



Built in carbon composite

Metro at sea

Designed as **fast commuter** in public transportation, with high power PM electric engines, lithium batteries and fast chargers.

iCat creates new traveling experience where noise, vibrations and pollution are replaced with a sound of wind and waves.

Beside widely known pollution, noise represent significant issue for **human health** and environment.



The European Green Deal

New Growth Strategy



Benefits:

Zero pollution, Affordable secure energy, **Smarter transport**, High-quality food.

Contributing to Global Green Deal, **no one will be left behind**.

Investment of **one trillion euros** for confident decisions and environmentally responsible projects.

New jobs, Cleaner environment, **Better quality of life**.

3 concrete actions:

„Europe to become first climate neutral continent in the world by the 2050

Just transition fund with public and private money and help from the European investment bank.

Sustainable Europe investment fund”

„We Europeans are ready”

Ursula von der Leyen

Take Your Seat in iCat – Step into the Future

