



# Solar Ice Maker



## Background

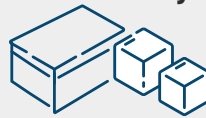
Indonesia is the world's  
**LARGEST & 2<sup>nd</sup> BIGGEST**  
maritime nation fish producer



Most of Indonesia's  
coastal areas are remote  
with limited access to  
electricity and fuel

**20-90%**

of fishery value losses\*  
due to inadequate  
availability of

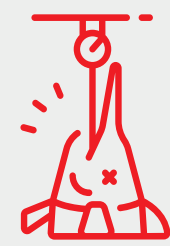


COOLING OPTIONS



ELECTRICITY

Value  
Loss\*\*



**47%**

LOMBOK

**50%**

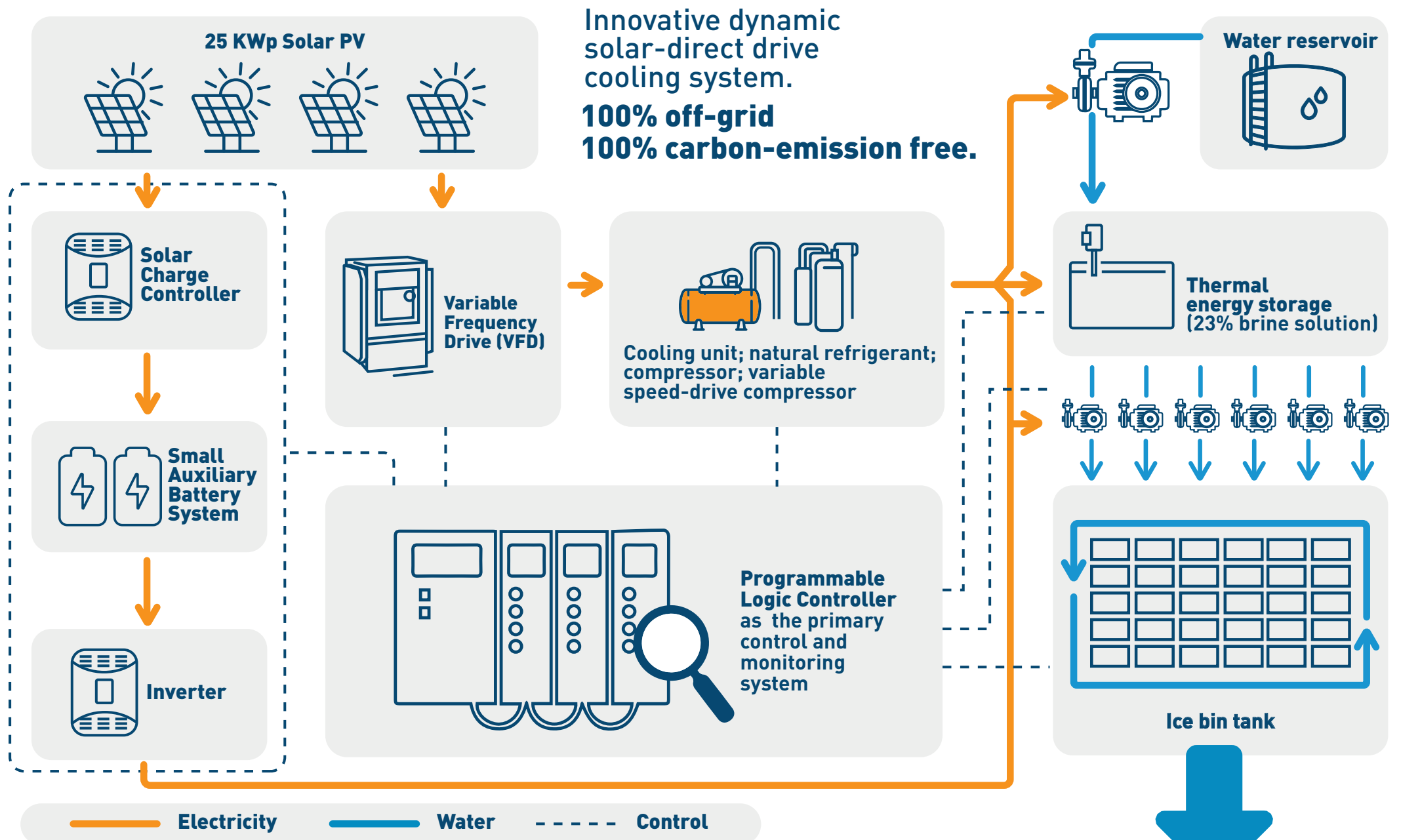
SOUTH SULAMU

**63%**

KUPANG

(\*source: FAO, 2015)  
(\*\*source: MDPI, 2017)

## Technology innovation



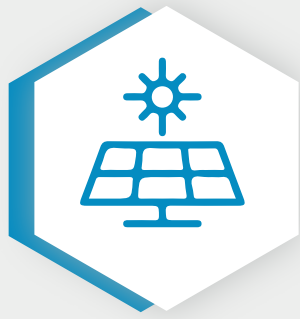
### Solar Ice Maker in Sulamu

- Ice block production capacity up to: 1 ton/day, 245 ton/year
- Estimated to cover 56% of ice block demand in Sulamu
- Competitive price compared to ice block supply in Kupang, without additional cost of travel
- Target market: small fishers with boat capacity of 1-3 GT





## Multiple benefits



100% renewable:  
solar-powered,  
no fuel needed



Environmentally  
friendly: using natural  
refrigerant R290



100% free of GHG  
emission: 40 ton  
CO<sub>2</sub>eq. Emission  
avoided yearly by  
substituting  
diesel fuel



Adopting  
international  
technology, but  
locally manufactured  
in Indonesia



## Why Sulamu?

- Disadvantaged fishery community with lack of ice
- Potential fish production: 1,020.33 ton per year (BPS Kupang, 2018)
- Closest ice factory and cold storage is in Kupang (Oeba Port), 85 km away by car and around 1-hour away by boat

Local business implementation (Sulamu):



Cooling technology:



## PARTNERSHIP

Coordination & Engineering Design



ILK Dresden  
Institut für Luft- und Kältetechnik  
gemeinnützige Gesellschaft mbH

Engineering & manufacturing:



For all your cool and freshness

Photovoltaic & power electronics:



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