Onawi CIC

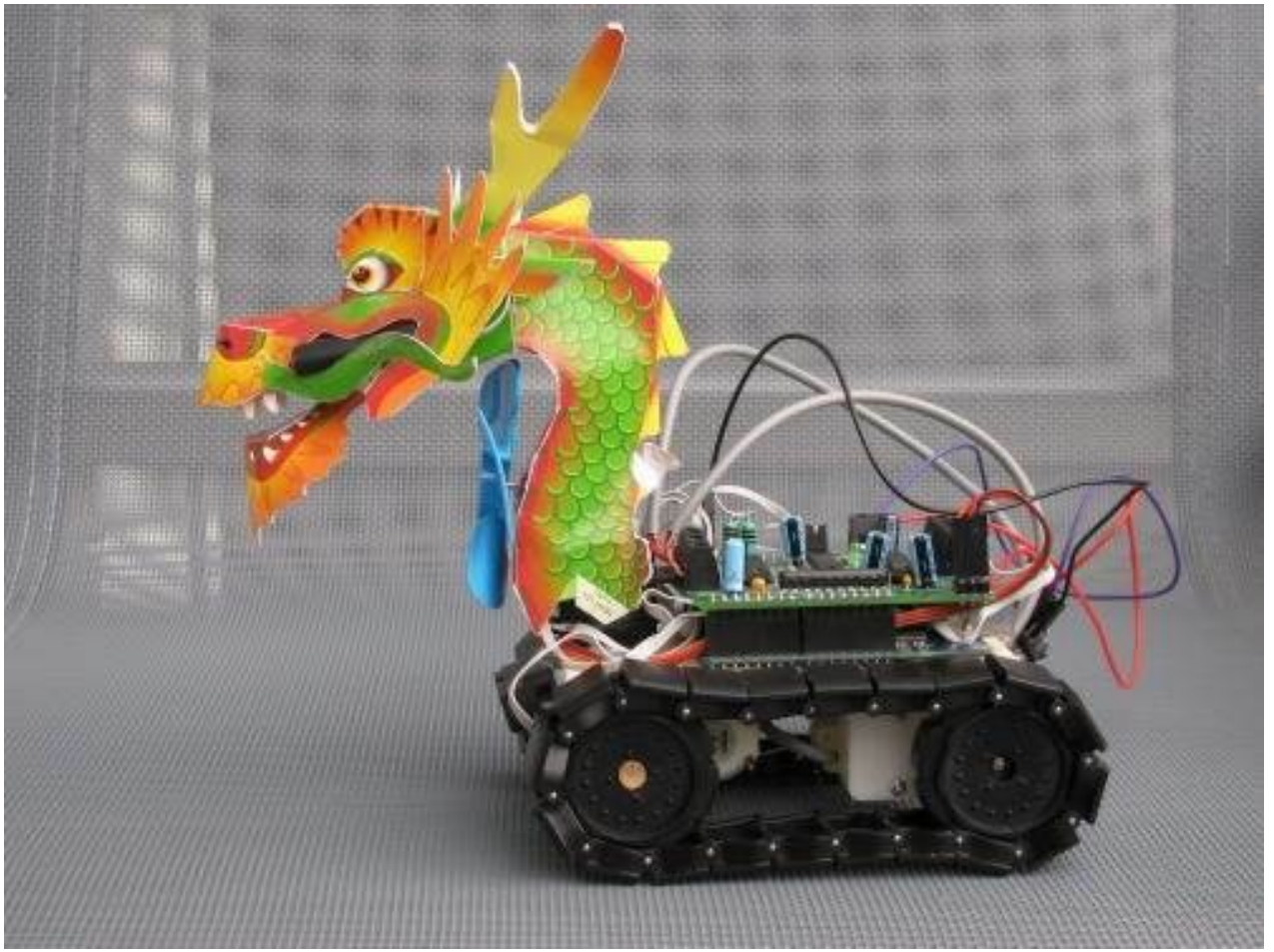
Beyond DiY: Open Hardware and Renewable Energy

open hardware

The next Big Thing?

onawi

Open Hardware



ARDUINO

Wayloy.com CC BY-NC-SA 3.0 US

Open Hardware

Fab Lab Amsterdam

CC BY-NC-ND nodesign.net

Open Hardware

Local Motors

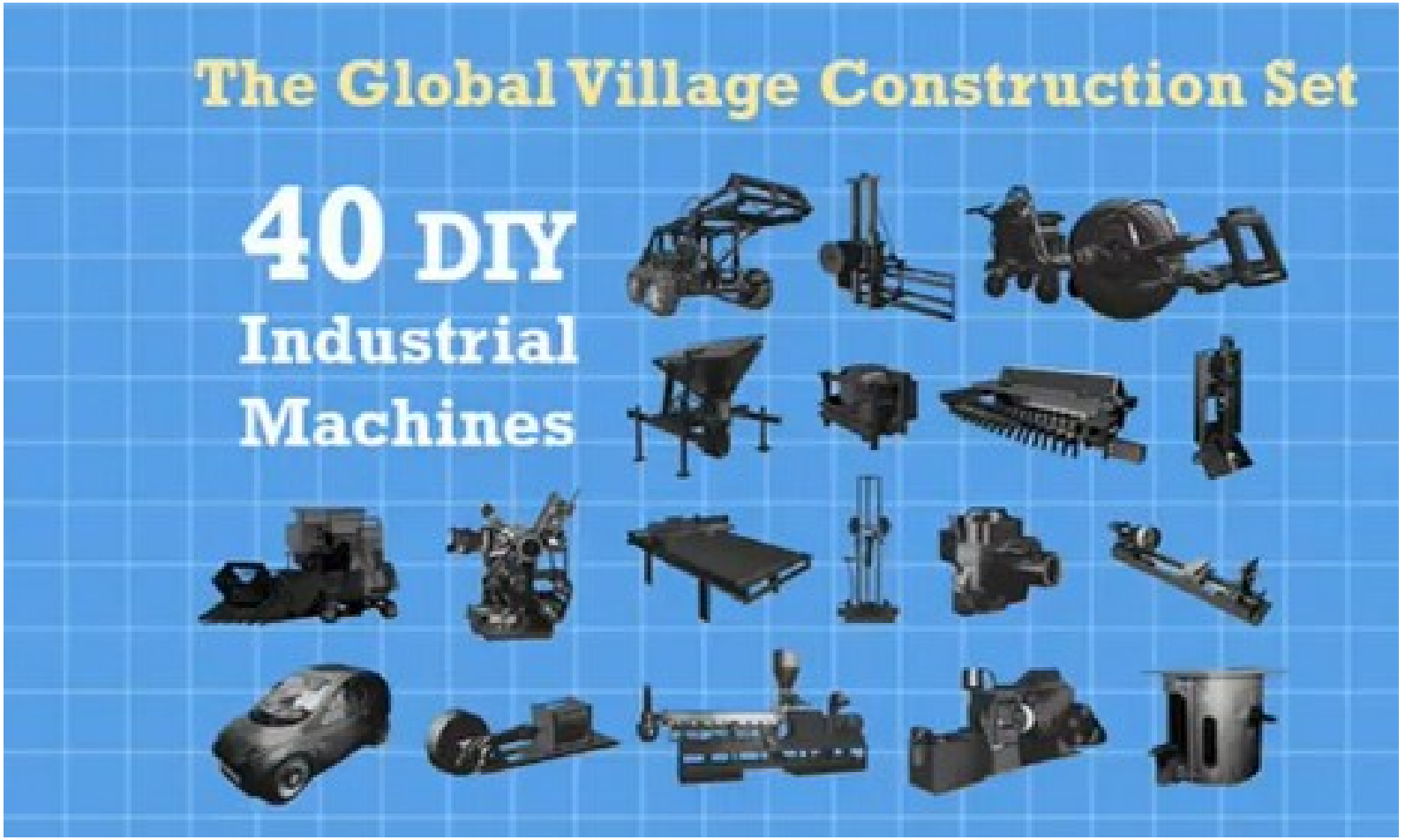
© Local Motors / CC-BY-NC-SA mehugtree

Open Hardware

Most Projects

- Freedom to Tinker
- Customisation
- Niche Market
- Low volume
- Workshop built

Open Hardware



Open Farm Tech

Open Hardware

Riversimple / 40 Fires

Onawi Community Interest Company

- Open Source Innovation
- Horizontal Tech Transfer
- Medium Size Wind
- Non-profit

Onawi

- Small **Industry**: factory not workshop
- Supply chain and **mixed IP** environment
- **Lifecycle** approach: design, build, operate, improve
- Wind Turbine design: Highly **specific skills**
- **Hybrid** technologies: steelwork, power electronics, airfoils, control

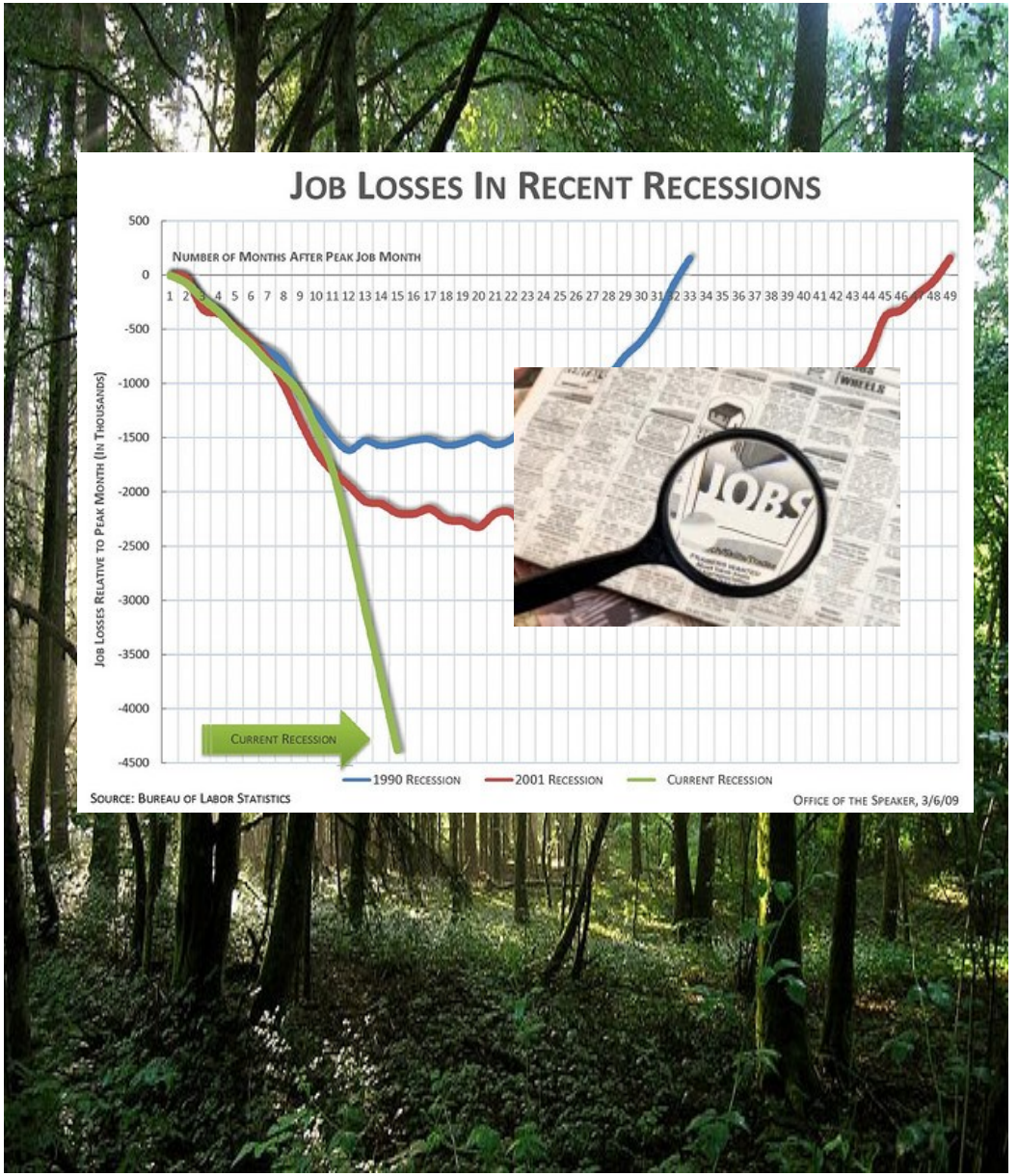
Appropriate Turbines

Open Design

- Easier to maintain
- Suit local conditions
- Transparency design drivers

Sustainable development

- Clean tech
- Local industry
- Normally 90% of wind money goes abroad
- Political support



Onawi Technology Transfer

- Equity
- License agreements
- Purchase of equipment
- Purchase blueprints
- Hiring personnel

- Cooperation
- Open Licensing Share Alike
- Suppliers' participation
- Available CAD
- Paid for services

Onawi Licensing Framework

Open Hardware NOT the same as OSS

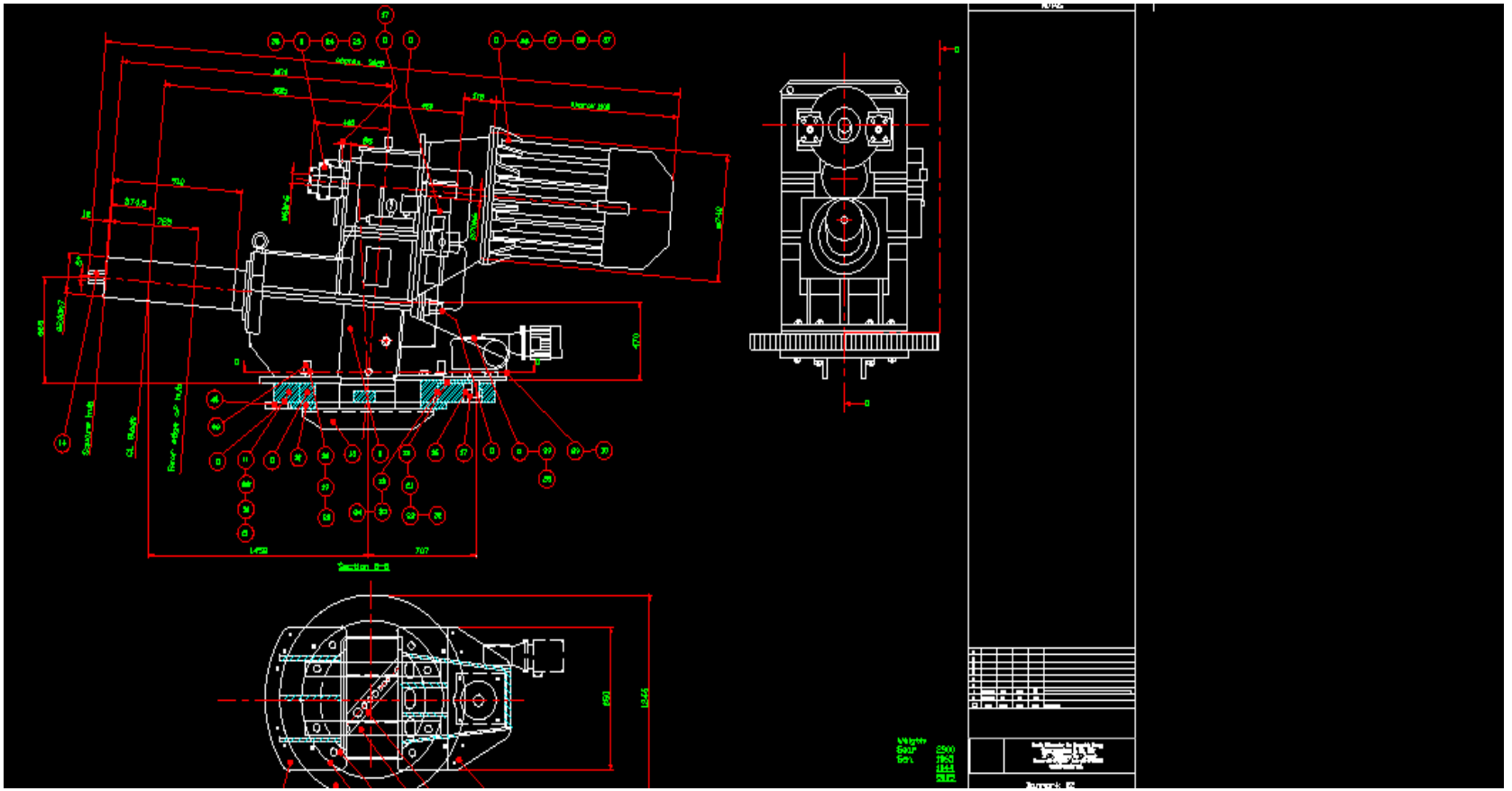
- Creations: GPL, CC based on Copyright
- Physical objects: patents and registered design

Open Hardware can be reverse engineered.

Only true protection: recognition and community

Onawi Licensing Framework

Seed designs: blueprints available online CC-BY-SA



Onawi Licensing Framework

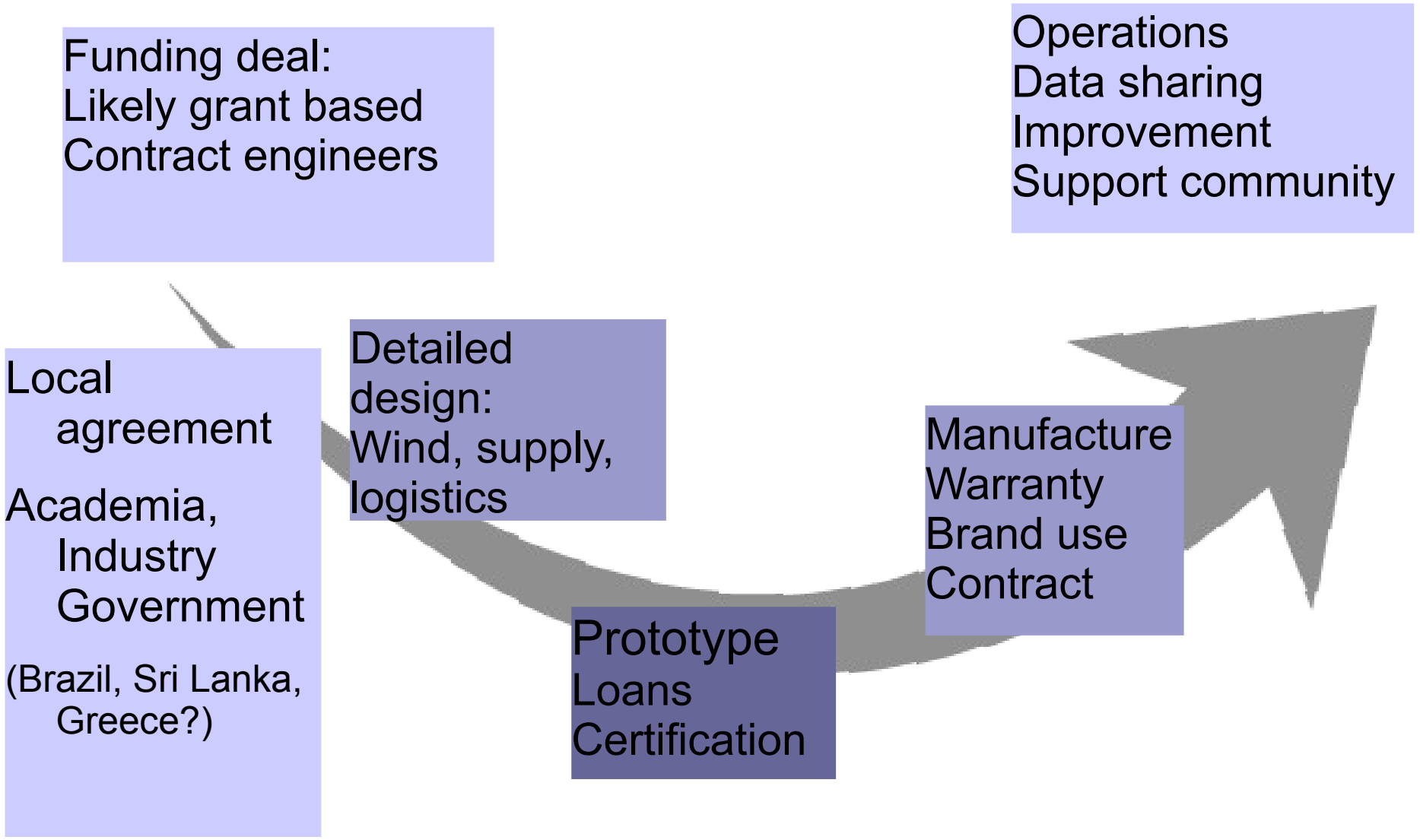
Existing older designs from partners, tried and tested

Nordic Folkecenter for Renewable Energy (DK)

Onawi Design Community

- Still ad-hoc
- Mix individuals, companies and institutions
- Issues for OH:
  - Governance: cannot fork easily
  - Poor online tools (PLM): Sourceforge for Hardware
  - CAD: little FLOSS and interoperability issues
  - Skills and motivations different from OSS

Onawi Co-operation Framework



The role of Onawi CIC

- Promote and fundraise
- Facilitate community (social and tech tools)
- Stewardship of openness
  - Non-profit
  - CIC asset lock on any resources (UK law)
  - Legal entity: sign contracts and pursue claims
  - Brand bona fide participants