Onawi CIC

Beyond DiY: Open Hardware and Renewable Energy
Open Hardware

The next Big Thing?
Open Hardware
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

The Global Village Construction Set

40 DIY Industrial Machines

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

Funding deal:
Likely grant based
Contract engineers

Operations
Data sharing
Improvement
Support community

Local agreement
Academia,
Industry
Government
(Brazil, Sri Lanka,
Greece?)

Detailed design:
Wind, supply,
logistics

Prototype
Loans
Certification

Manufacture
Warranty
Brand use
Contract

Support community
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