Open Innovation Projects - entries in the *energy* category

Website's content (partial) in one document and extrapolation of OIP's categorization to projects not listed by OIP. This particular document is solely dedicated to entries in relation with the OSHWL field *energy*.

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Open Source HardWare Library (OSHWL)

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1 Introduction

open-innovation-projects.org (*OIP* in the text following) lists mostly OSHW projects and systematically categorizes them. Out of the ~150 listed entries, 109 retained our attention. Out of those 109, the following 5 are directly in relation with the OSHWL field *energy* (table 1):

title	OSHWL path	short description	keywords from OIP
3G Stoves	energy/thermal/stoves		stove, 3g, woodgas, tlud, biomass
Absorber Roof	energy/solar/thermal		solar, thermal, collector, roof, intergrated
Greenwatts*	energy		solar, energy, green, DIY, alternative, sun, heating, electricity, solar cooking, solar concentration, heliostat
OS BHKW	energy/thermal/cogen	micro CHP	-
Solar Cooking Archive (SCA)	energy/solar/thermal		-

Tab. 1: OIP entries treated by OSHWL, directly in relation with the OSHWL field *energy*
*: Greenwatts is the merger of two OIP entries that lead to the same project (Greenwatts): *Canuckles* and *solar tracking*.

We will also apply the same "standardized" categorization effort to the following OSHWL *energy* projects, not listed by OIP (table 2):

title	OSHWL path	short description
Global Anchor	energy/hydro	micro hydropower
SolarFire	energy/solar/thermal	concentrated solar power
SolarFlower	energy/solar/thermal	concentrated solar power

Tab. 2: other OSHWL projects categorized according to OIP's method

To that we will add 16 more of the 109 OIP entries which were interesting to us. Those 16 seem *indirectly* in relation with the OSHWL field *energy* (table 3):

title	OSHWL path	short description	keywords from OIP
Arduino	electro-it-monit		-
AVR Butterfly Logger (AVR BL)	electro-it-monit		datalogger, logging, logger
Balloon	electro-it-monit		-
Beagle Board	electro-it-monit		omap3, linux, open hardware
Ben NanoNote	electro-it-monit		copyleft hardware, open source, openwrt
Ethernut	electro-it-monit		-
Etherrape	electro-it-monit		-
Flash-Plaice	electro-it-monit		-
Freeduino	electro-it-monit		-
Gumstix	electro-it-monit		-
openenergymonitor	electro-it-monit		energy monitor, power meter, renewable energy
OpenRemote	electro-it-monit		-
OpenServo	robo-manuf		-
OpenWrt	electro-it-monit		-
Sanguino	electro-it-monit		microcontroller, board
SquidBee	electro-it-monit		-

Tab. 3: OIP entries treated by OSHWL, *indirectly* in relation with the OSHWL field *energy*

The following is the categorization itself (in tables making overview and comparison easy, as opposed to individual project sheets as is the case on open-innovation-projects.org), copied from OIP for the projects they list and complemented with the projects from table 2.

OIP groups criteria in three categories:

- project details
- (product details) removed in this document
- institutional design and production

Much of the information OIP provides was ignored in this document, mostly because of perceived subjectivity and lack of comparability.

2 Project details

First, a description of the categories in the tables directly following.

development Status current stage of development according to the following:

1	planning/virtual development - ideas and digital dev. evolving
2	prototyping started - first physical proto. assembled, testing phase
3	first working proto. - working proto. available, release to community, further dev. needed
4	production stable - fully functional product permanently available on market, further dev. possible
5	mature - final dev. stage reached, no further dev. necessary
Inactive	dev. stopped, no final product available

in case several products are being developed, the stage of the most advanced product is indicated.

license and trademark

- whether the project is using an open license and of which type
- whether they have a registered trademark

country main location, i.e. home country of the project leader, the core team or the office location.

start year year in which the project was initiated.

title	dev. status	licence (and TM)							country	start year
		GPL, LGPL or similar copyleft	BSD, MIT or similar permissive	Creative Commons	other open	commercial	no license	registered trademark		
3G Stoves	3					x		x	IN	2008
Absorber Roof	3	-	-	-	-	-	-	-	-	-
Greenwatts	3						x		CA	2008
OS BHKW	2						x		D	2006
SCA	4			x					-	-
Global Anchor										
SolarFire										
SolarFlower										
Arduino	5	x		x				x	IT	2005
AVR BL	3		x						UK	2003
Balloon	3				x				-	1999
Beagle Board	4	x		x			x (?)		US	2007
Ben NanoNote	4	x		x				x	HK	2009
Ethernut	4		x						D	2001
Etherrape	3	-	-	-	-	-	-	-	-	2006
Flash-Plaice	1	x							-	2007
Freeduino	3			x					-	-
Gumstix	4			x				x	US	2003
openenergymonitor	3	x							UK	2009
OpenRemote	3			x				x	-	2008
OpenServo	3		x						-	-
OpenWrt	4	x							-	-
Sanguino	3			x					US	2008
SquidBee	4			x				x	E	-

Tab. 4: project details

3 Institutional design and production

First, a description of the categories in the table directly following.

contribution

(user whether private persons or users are actively involved in the development.) *is the case for all entries*

commercial whether commercial companies are actively involved in the development.

research whether research institutions are actively involved in the development.

type of collaboration

collective development of...

one common product if a community is commonly developing one product.

several common products if a community is commonly developing several different products.

published knowledge...

with some coll. dev. if instructions or ideas are published and others make comments and suggestions.

without collective dev. if information is purely revealed.

degree of openness (radicalized from OIP's version) / entirety of openness Whether or not the project is revealing all available information. It might be interesting to systematically ask again/verify this.

production entity responsible for production. "related company or assoc." refers to an entity closely related to the project or with a production mandate. "outsourced" is whenever an external party is paid for supplying components.

title	contrib.		type of collab.				entirety of openness, as ticked or not in OIP	product produced by								
	commercial	research	collective development of *one* common product	collective development of *several* common products	published knowledge *w/* collective development	published knowledge *w/o* collective development		project leader	core team	developer community	user community	related company or association	outsourced	other	not yet clear
3G Stoves		x			x			x			x					
Absorber Roof					x			x								
Greenwatts						x	x									x
OS BHKW	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-	-
SCA				x			x			x	x					
Global Anchor																
SolarFire																
SolarFlower																
Arduino				x					x	x		x				
AVR BL			x				x	x								x
Balloon	x	x	x									x				
Beagle Board	x			x			x					x				
Ben NanoNote	x	x		x					x			x				
Ethernut	x	x		x								x				
Etherrape	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Flash-Plaice	x		x						x							
Freeduino				x			x					x				
Gumstix	x			x								x				
openenergymonitor					x		x	x								
OpenRemote	x		x													x
OpenServo	x			x			x					x				
OpenWrt			x					-	-	-	-	-	-	-	-	-
Sanguino					x		x	x				x				
SquidBee	x	x	x				x					x				

Tab. 5: institutional design and production details