Mobile renewable energy platform on a cargo bike

The Vélo M² project is based on a mobile renewable energy platform. The energy is given by normal bikes in a generator stand, where an average cyclist can give 100W. The platform is buffered so a continuous flow of electricity can power anything you want. We like to provide electricity to an open-air cinéma, or sound systems.

Difficulté **Difficile** | Durée **1 mois** | Catégories **Énergie, Sport & Extérieur**

Coût **2000 EUR (€)**

Sommaire

Introduction

The cargo bike is a great alternative for the car in congested cities; with our stackable modules we give sustainable initiatives endless possibilities. Vélo M² (pronounced Vélo em carree) is a multi modular capsule system fitting on cargo bikes. With our energy module supplied by solar and pedal power you can have the electricity on location to power an open-air cinema, a mobile fablab and much more on top. We bring all these plans to an open source platform and community where anybody can contribute. Cargo Bikes can be used for more then only transport, with Vélo M² we give the tools to rethink how we interact, move and use energy.
We will guide you through the conception of the "energy module". The energy module is an electrical module build into the wooden basic module. It has :
- input : DC power for 5 generation bikes (check this video to get an idea of pedal power)
- output AC : power for an open-air cinéma, projector and active speakers
- output DC : power for a 3D printer
- buffer : DC supercapacitor (which is more eco-friendly than a battery)

There are different ways for putting the module together. We will describe how we made the first prototype. We are working on an next version which will be ready for 2018.

Erreur lors de la création de la miniature : convert: unable to extend `/tmp/transform_eb45753e6647.jpg' @ error/convert.c/ConvertIm

Matériaux

- buffer supercapacitor 48V
- inverter DC to AC 24V to 220VAC
- converter DC to 24DC
- protection switches
- voltage measurement
- cables, connectors, plugs and on/off switches

Outils

- voltage source
- multimeter
- cable stripper
- drilling equipment

Basic Multi-Modular Frames for Cargo Bikes - Stackable watertight laser cut boxes by Velo M2

energy-module-electric-wire-scheme-version-poc212

Étape 1 - Electrical wire scheme

charging
- input : DC power for 5 generation bikes
power 5*100W - peak 5*200
voltage 48V
current 30A
conversion and output
- output AC : power for an open-air cinéma, projector and active speakers
- output DC : power for a 3D printer
power 700W
voltage 220AC
current 1A
battery
- buffer : DC supercapacitor
power 1000W
voltage 48V
current 30A - peak 40A

Notes et références

Magnificent revolution http://www.magnificentrevolution.org/diy/single-bike-generator/
Vélo M² project [www.velom2.be www.velom2.be]