Energy Efficient (Green) Cloud!
The CompatibleOne Experience

Laurent Lefevre, Jean-Patrick Gelas, Olivier Mornard, Maxime Morel
laurent.lefevre@inria.fr, jean-patrick.gelas@inria.fr, olivier.mornard@inria.fr, maxime.morel@inria.fr

http://www.ens-lyon.fr/LIP/RESO/eecloud/

- CompatibleOne: French Project on Cloud software stack design (Fonds Unique Interministériel (FUI) support: BULL Leader + Mix of SMEs and Academics)

- Integration project (OpenStack, OpenNebula)

- Development project: new software components

- Energy Monitoring of physical and virtual resources
- Energy usage exposing for users and clouds managers
- Energy monitoring streams for upper layers software

- Design Energy aware software components
- Measures exploitation (Utility)
- Jobs/Tasks distribution / Virtual Machine placement
- Billing
- Infrastructure management
- Carbon footprint evaluation

Fig 1 - CompatibleOne architecture

Fig 2 - Cloud energy collect infrastructure

Fig 3 - Showatts software framework