

Open Energy Resources

for the Energy Transitions

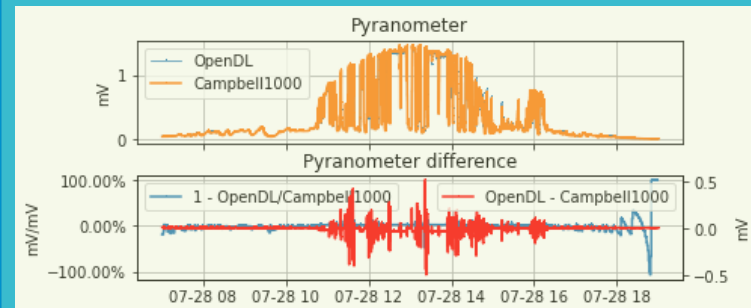
Adrian Jimenez
25th Sep 2024

Workshop

Oldenburg, 25th -27th September

Open (Source) Data (Logging)

for the Energy Transitions



OpenREdl
Minigrids
Python

Open Source
Open Energy Resources

Community Projects

Open Energy Resources

for the Energy Transitions

- What are they?
- Advantages and Impact
- Our approach during the worksop

Open Energy Resources

for the Energy Transitions

- **What are they?**
- Advantages and Impact
- Our approach during the worksop

What are Open Energy Resources?

We call Open Energy Resources:

tools or components (e.g. hardware, software or data) that can be applied in energy areas. We are mainly interested in **resources that can support the energy transitions** in the following areas:

- To learn
- To research
- To plan and design
- To monitor and control



UNESCO.org - Understanding open science (p:6)

What are Open Energy Resources?

They are often developed and maintained by communities that also use them. For example:

- Open Source Communities
- Open Data Scientific Communities
- Open Energy Modelling Communities
- Open Hardware Communities

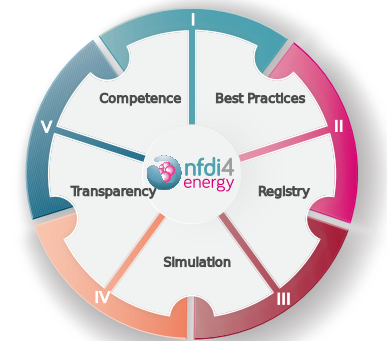


Open access logo



Colin Viebrock

openmod open energy
modelling initiative



What are Open Energy Resources?

They are often developed and maintained by communities that also use them. For example:

- Open Source Communities
- Open Data Scientific Communities
- Open Energy Modelling Communities
- Open Hardware Communities

Each of them have their own dynamics, but they share some characteristics, such as:

- Normally free to use and modify (depending on the licence)
- Roles: main developers, contributors and users
- Keep track of versions to control compatibility



Open access logo



open source
hardware



open source
initiative®

Colin Viebrock

What are Open Energy Resources?

Some examples:

- To learn
 - Laboratory experiments
 - Modeling and data processing
- To research
 - Collaborative research (share data, models)
 - Modeling and Simulation
- To plan and design
 - Assessment of potential with open data or measurements
 - Simulation of demand and production
- To monitor and control
 - Operation monitoring
 - Management and Decision making

What are Open Energy Resources?

Some examples:

- To learn
 - Laboratory experiments
 - Modeling and data processing



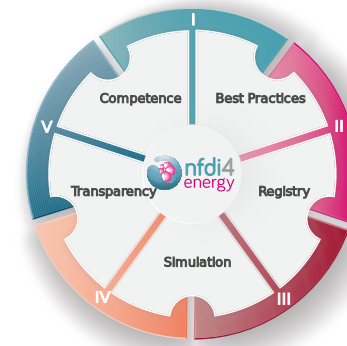
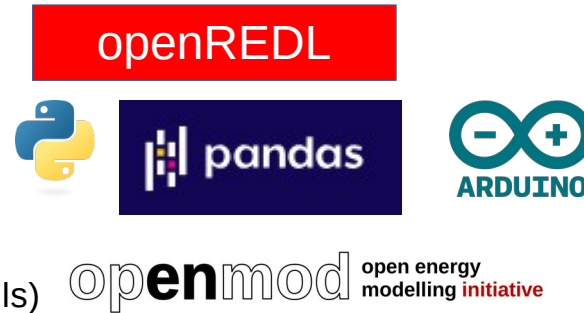
Applications:

- Data logging hardware and software
- Software to process measurements

What are Open Energy Resources?

Some examples:

- To learn
 - Laboratory experiments
 - Modeling and data processing
- To research
 - Collaborative research (share data, models)
 - Modeling and Simulation



Applications:

- Data logging hardware and software
- Software to process measurements
- Modeling software
- Sharing platforms
- Open models (e.g. energy grids)

What are Open Energy Resources?

Some examples:

- To learn
 - Laboratory experiments
 - Modeling and data processing
- To research
 - Collaborative research (share data, models)
 - Modeling and Simulation
- To plan and design
 - Assessment of potential with open data or measurements
 - Simulation of demand and production
- To monitor and control
 - Operation monitoring
 - Management and decision making



MTRESS



Applications:

- Data logging hardware and software
- Software to process measurements
- Modeling software
- Sharing platforms
- Open models (e.g. energy grids)
- Open data (e.g. meteorological)
- Visualizations tools
- Management tools

What are Open Energy Resources?

Some examples:

– To learn

- Laboratory experiments
- Modeling and data processing



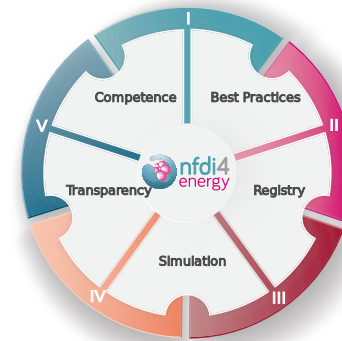
– To research

- Collaborative research (share data, models)
- Modeling and Simulation



– To plan and design

- Assessment of potential with open data or measurements
- Simulation of demand and production



MTRESS

– To monitor and control

- Operation monitoring
- Management and decision making



Applications:

- Data logging hardware and software
- Software to process measurements
- Modeling software
- Sharing platforms
- Open models (e.g. energy grids)
- Open data (e.g. meteorological)
- Visualizations tools
- Management tools

Open Energy Resources for the Energy Transitions

- What are they?
- **Advantages and Impact**
- Our approach during the worksop

Advantages and Impact

- Reuse of tools (vs often expensive proprietary tools)
- Reduce duplicated work & build up
- Reduce time, effort and costs

Advantages and Impact

- Reuse of tools (vs often expensive proprietary tools)
- Reduce duplicated work & build up
- Reduce time, effort and costs

- Expand application (enable people that could otherwise not do it)
- Accelerate projects
- Shared knowledge

Advantages and Impact

- Reuse of tools (vs often expensive proprietary tools)
- Reduce duplicated work & build up
- Reduce time, effort and costs



- Expand application (enable people that could otherwise not do it)
- Accelerate projects
- Share knowledge

- **Improved development through active feedback and contribution**
- **Support decentralized efforts for the energy transitions**
- **Increase focus in local and particular issues**

Open Energy Resources for the Energy Transitions

- What are they?
- Advantages and Impact
- **Our approach during the workshop**

Our approach during the workshop

- Experiences in projects
 - Minigrids management software
 - Data logging and monitoring in a local energy cooperative

Our approach during the workshop

- Experiences in projects
 - Minigrids management software
 - Data logging and monitoring in a local energy cooperative
- Data logging
 - Theory
 - openREdl hardware and software for data logging
 - Visualizations tools

Our approach during the workshop

- Experiences in projects
 - Minigrids management software
 - Data logging and monitoring in a local energy cooperative
- Data logging
 - Theory
 - openREdl hardware and software for data logging
 - Visualizations tools
- Open data
 - Resources and data publishing
 - Application in utility scale projects

Our approach during the workshop

- Experiences in projects
 - Minigrids management software
 - Data logging and monitoring in a local energy cooperative
- Data logging
 - Theory
 - openREdl hardware and software for data logging
 - Visualizations tools
- Open data
 - Resources and data publishing
 - Application in utility scale projects

Application

Reflection

Discussion

Lets start the workshop!

Make the most of it

Ask questions

Have fun

Thank you!