

# Open Science Publishing Flood and Collaborative Authoring

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## **Open Science and Collaborative Working in Energy System Research**

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# Reiner Lemoine Institut

- Not-for-profit research institute
- 100 % subsidiary of Reiner Lemoine Foundation (RLS)
- Established 2010 in Berlin
- Managing Director: Dr. Kathrin Goldammer

## Objective

Applied Research for 100% Renewable Energies

## Scientific staff

~ 36 researchers and 30 students in 3 research fields



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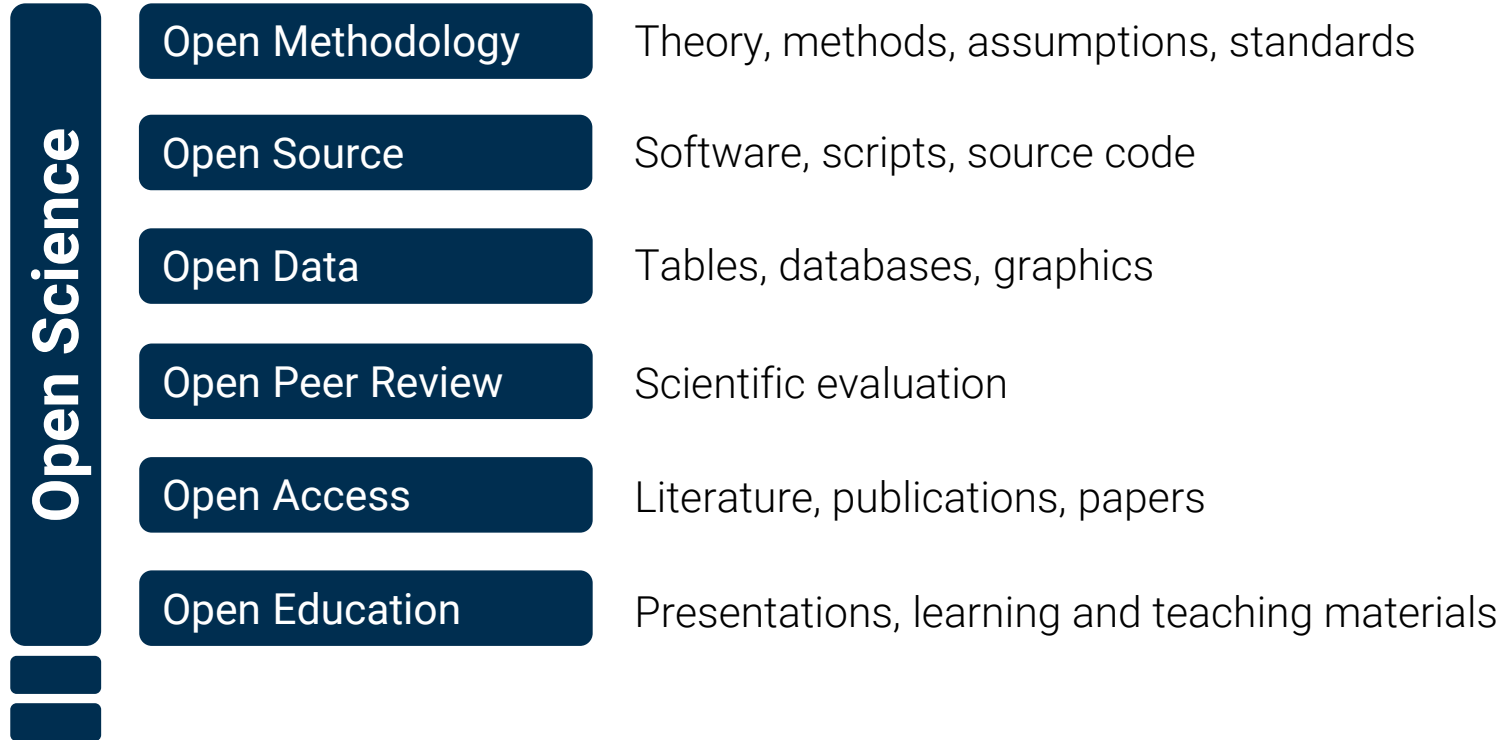
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## Motivation

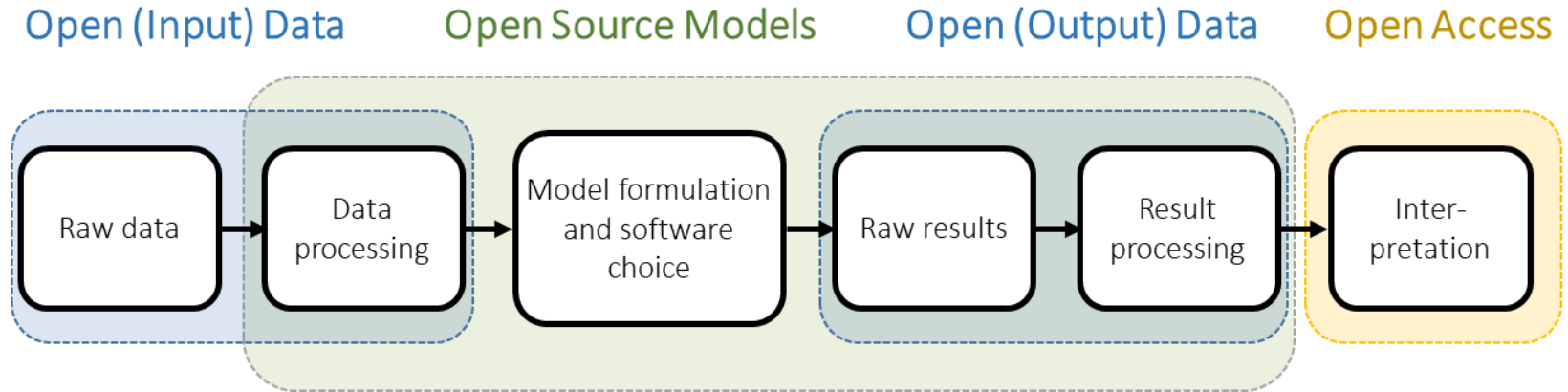
- Improves reproducibility and good scientific practice
- Allows reuse and collaborative development
- Increases credibility and legitimacy
- Ethical considerations suggest that research financed with public money should be public
- Becomes the new norm

## Barriers

- Knowledge and experience necessary
- Additional effort needed
- Personal and institutional reservations in an performance-based science system

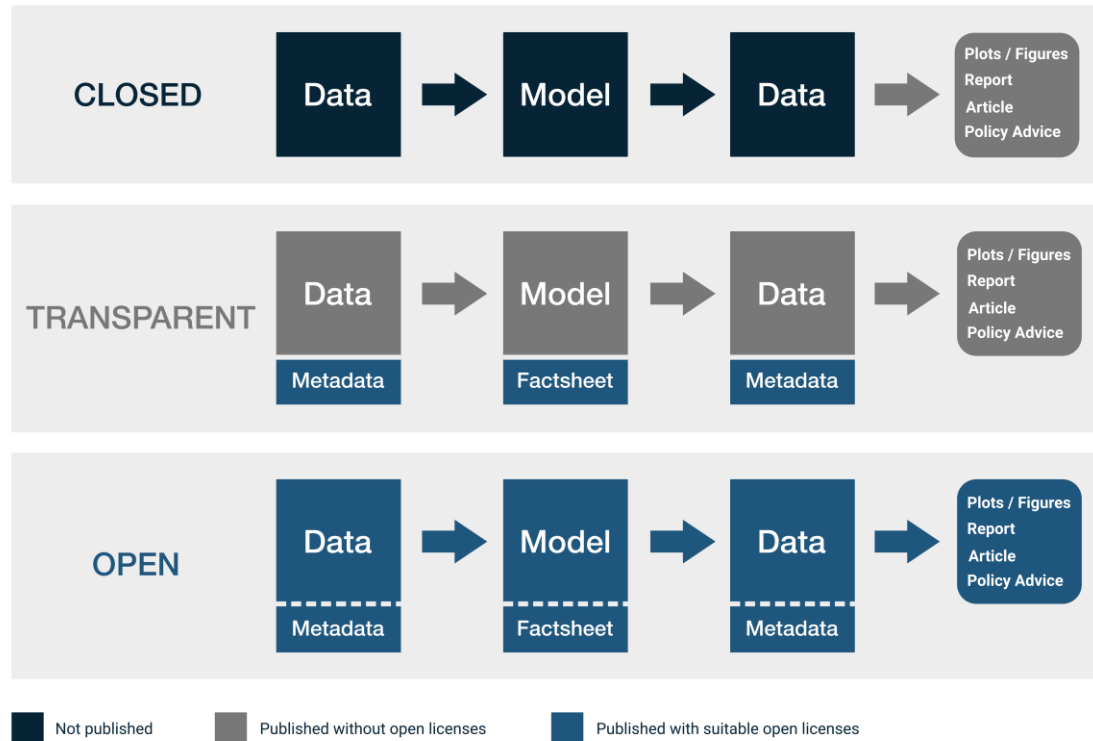


# Open Science - Energy System Modelling






„Open data, open source, and open access in relation to the energy modelling process.”  
[Pfenninger et al. \(2018\)](#) licensed [CC BY 4.0](#)

# Open Science – Wording



# Open Science – Licenses

<b>Open License</b>		<b>Software-License</b>	<b>Data-License</b>	<b>Artwork-License</b>
Public Domain		CC0	CC0	CC0
Permissive		MIT	CC BY	CC BY
Copyleft		GPL / AGPL	ODbL	CC BY-SA

“RLI Open License Matrix” © [Reiner Lemoine Institut](#) | [CC BY 4.0](#)

## Scientific Use Cases:

- Creation of **documents** (e.g. project application, report, paper)
- Creation of minutes (e.g. meeting, WebCo, conference, workshop)
- Creation of **software** (e.g. energy system models, data processing scripts)
- Creation of data **collections** (e.g. literature research, parameter collection)



# Collaborative Work and Research

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- Cooperation**                     $\triangleq$  „purposeful interaction“
- Teamwork**                     $\triangleq$  analogous, spatially and temporally limited cooperation
- Collaboration**                 $\neq$  collaborators = „working with the enemy“
- $\triangleq$  simultaneous, interactive and purposeful collaboration

## Collaborative Tools

- Technical tools for digital collaboration
- Specialized areas and niches
- Very different concepts and implementations

## Criteria:

- **Server:** Online (SaS) or Self-Hosted?
- **License:** Open Source or proprietary?
- **Speed:** Real-time or near-time?
- **Interfaces :** Format and export?
- **Popularity :** Distribution and future availability?
- **Experiences :** Usability and implementation process?

# Collaborative Work and Research

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## Text:

- ~~Google Docs~~
- EtherPad
- CyptPad
- ~~Pastebin~~

## LaTeX:

- Overleaf
- ShareLatex

## Code:

- git + GitHub
- SVN

## Data:

- ~~Google Sheets~~
- NextCloud + Onlyoffice
- DataCite
  
- OpenEnergyPlatform

# OpenEnergyPlattform (OEP)



openenergyplattform.org

- University Magdeburg (OvGU) is host and main developer
- Funded projects until 2023
- Server deployment for +10 years guaranteed by OvGU
- Cross-tier community project
- Code available at [GitHub](#)



Gefördert durch:

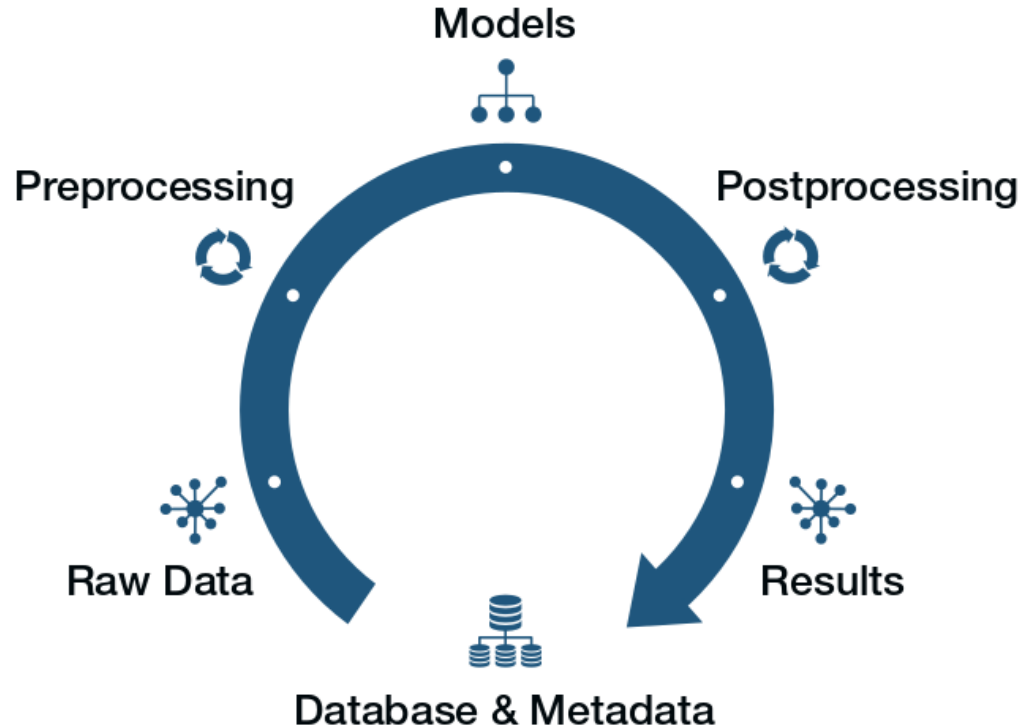


aufgrund eines Beschlusses  
des Deutschen Bundestages



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# OpenEnergyPlatform (OEP)



**Factsheets**

**API & oedialect**

**PostgreSQL Database**  
**OMI & OEP-Metadata-v1.4.0**

## Developments:

- OpenEnergyDatabase (oedb)
- Metadata for energy data (OEP-v1.4.0)
- Factsheets (Framework, Model, Scenario)
- API + oedialect

## Current Developments:

- OpenEnergyOntology (OEO)
- Scenario Bundles
- Open Peer-Review Process for Open Data

# Conclusions

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- Open Science in Energy System Research is evolving
- Suitable open licenses are essential
- Collaborative tools are increasingly used by researchers
- Templates and processes for collaboration needed
- Collaboration on open data sets is under development



# „Open Science is the new default, whether you like it or not.“



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