

openmod



# Transparency, Reproducibility and Quality of Energy System Analyses

A process to improve the scientific work

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# Transparency, Reproducibility and Quality of ESA

## Case study

- oemof framework
- oemof app Berlin Brandenburg (abbb)
- Two scenarios (ES2030, gruene2030)

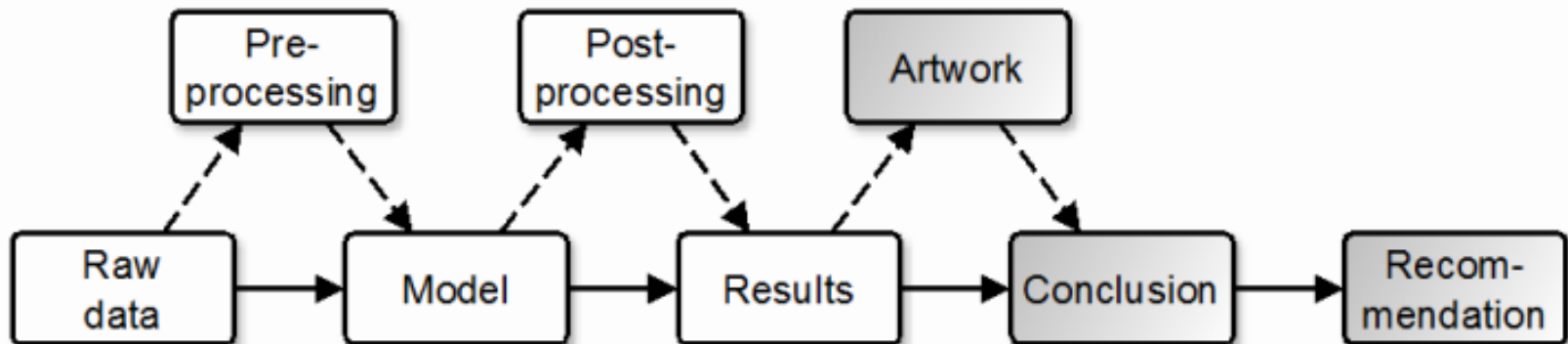
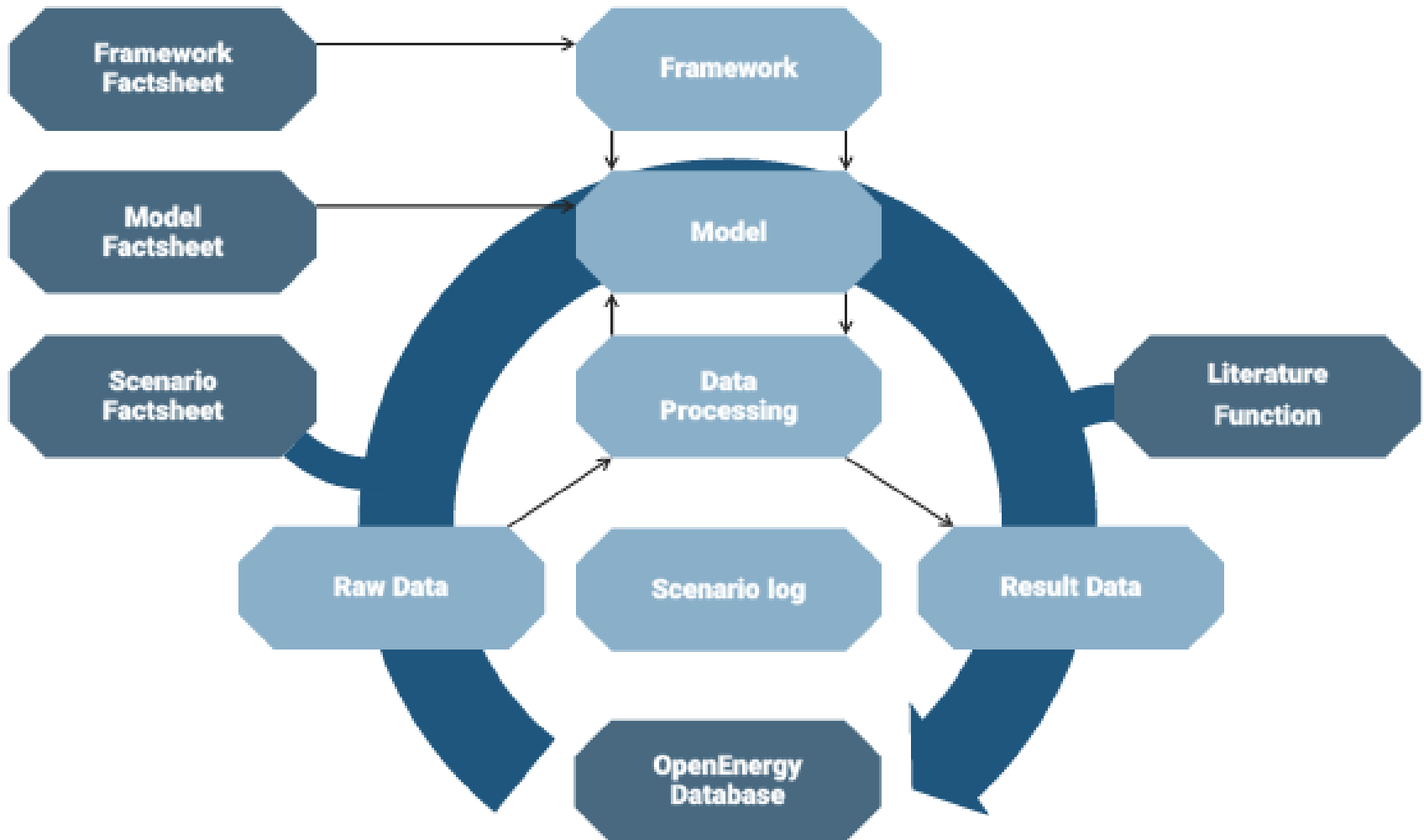


Figure 1: Simplified model flow. Figure by Ludwig Hülk / CC BY SA 4.0

# Transparency, Reproducibility and Quality of ESA



# Transparency, Reproducibility and Quality of ESA

## Modules

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- Glossary
- Licensing
  - framework/model (GPL3)
  - study (CC BY SA 4.0)
- Factsheets
  - Framework
  - Model
  - 2x Scenario
- Database (oedb)

# Transparency, Reproducibility and Quality of ESA

## Validation

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Cao, KK., Cebulla, F., Gómez Vilchez, J.J. et al.: Raising awareness in model-based energy scenario studies—a transparency checklist, in Energy, Sustainability and Society (2016) 6: 28. doi:10.1186/s13705-016-0090-z  
(<http://link.springer.com/article/10.1186/s13705-016-0090-z>)

### „Transparency Checklist“ (45 Questions)

- “General **transparency**” includes facts that are not necessary for reproducibility as e.g. name of author, licence, etc..
- “**Reproducibility**” are those facts of transparency that are necessary to reproduce the work.
- Whereas “**quality**”-related questions are including those questions that are evaluating the quality of the study and are not related to transparency.

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## Results

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Table 1: Results of the application of the checklist per category

<b>Field</b>	<b>T</b>	<b>Score</b>	<b>R</b>	<b>Score</b>	<b>Q</b>	<b>Score</b>	<b>Total</b>
General Information	6	83%	0	-	2	100 %	88%
Empirical Data	0	-	2	100%	1	100 %	100%
Assumptions	3	100%	2	100%	6	33 %	64%
Model exercise	6	100%	5	80%	3	67 %	86%
Results	0	-	2	0%	2	50 %	25%
Conclusions and Recommendations	0	-	0	-	5	20 %	20%
sum / average	15	93%	11	73%	19	47 %	45 / 69%

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## Future works

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- Create/ implement modules to improve the quality
- Traffic light system on Factsheets and data
- “Open Peer-Review” process in the OEP (openmod)
  
- Your ideas ???

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## Contact & License

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Feedback, suggestions and data requests welcome!

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