



Interreg 
2 Seas Mers Zeeën
European Regional Development Fund

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BISEPS |

Business clusters Integrated Sustainable Energy PackageS

REACT – Renewable Energy Area Collaboration Tool

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REACT – Renewable Energy Collaboration Tool

WHAT?

- Decision support tool
- Inter-firm sustainable energy generation in business clusters
- Targeted users: business park managers

WHY?

- Support
- Facilitate
- Stimulate

HOW?

- Generic tool
- Multi-disciplinary approach
- High-level & early-stage

REACT – Renewable Energy Collaboration Tool

WHAT is it not?

- Detailed simulation software
- Investment analysis tool
- Spatial planner

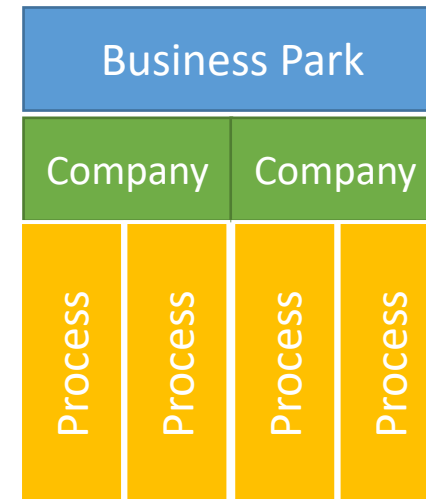
OUTPUTS

- High level selection of technologies *assumed* most suited for this particular business park
- Basic evaluation of required investment costs and environmental benefits
- Pointers to start further detailed study and analysis

REACT model structure

Structure

- **Business park ...**
 - Define legislative, economical and technical constraints
- **...contains multiple companies...**
 - Define general business parameters
- **...that contain one ore more processes**
 - Define energy use profiles
- **Input can be based both on quantitative and qualitative data**
 - Quantitative: e.g. amount of energy consumption
 - Qualitative: e.g. type of energy consumed



REACT model structure in depth

For each company

- Business type
- Building type
- Surface area, density, use
- Work regime
- Preferably: total primary energy use
- (Potential) own energy production
- Waste energy
- ...

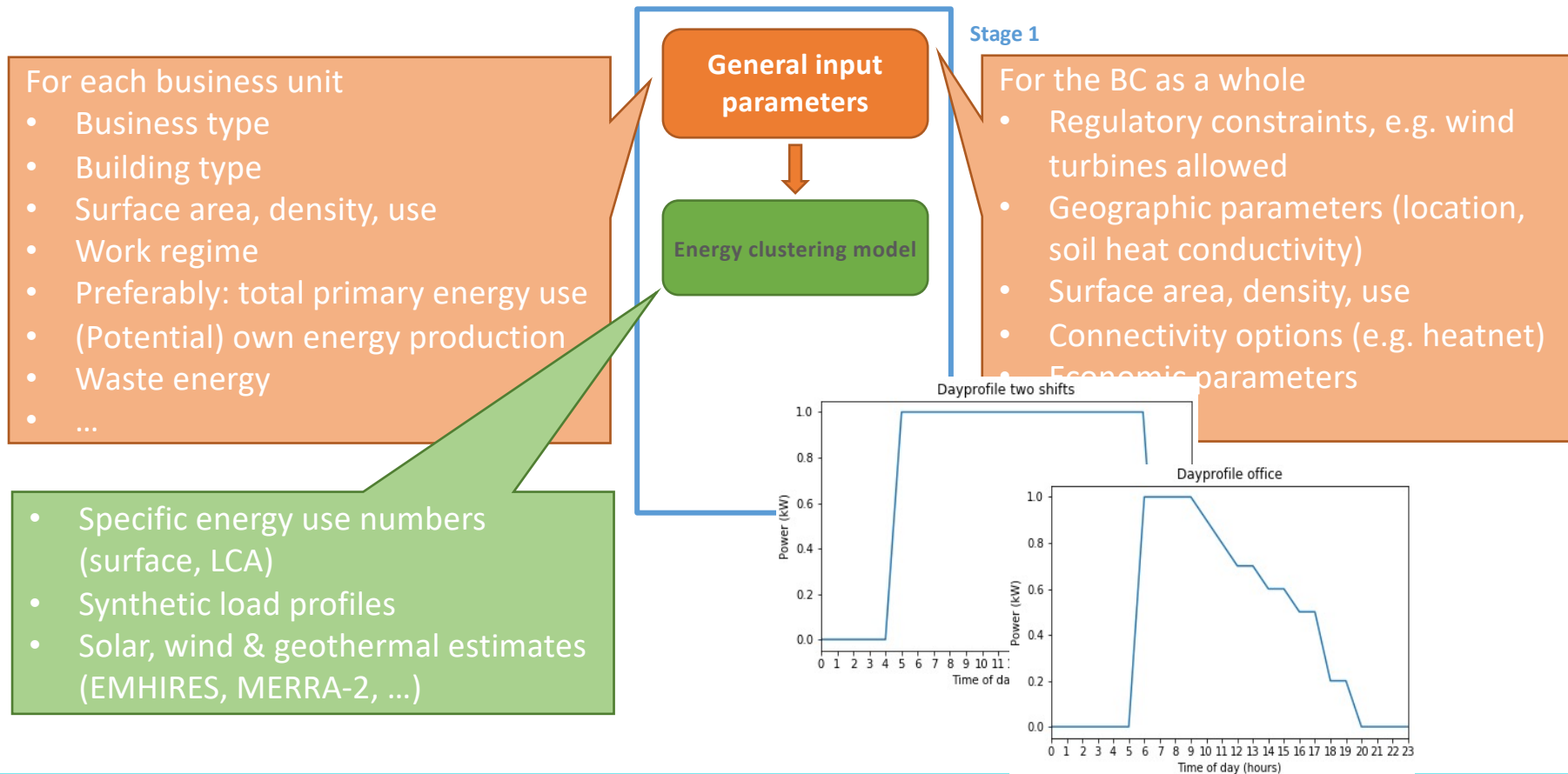
**General input
parameters**

Stage 1

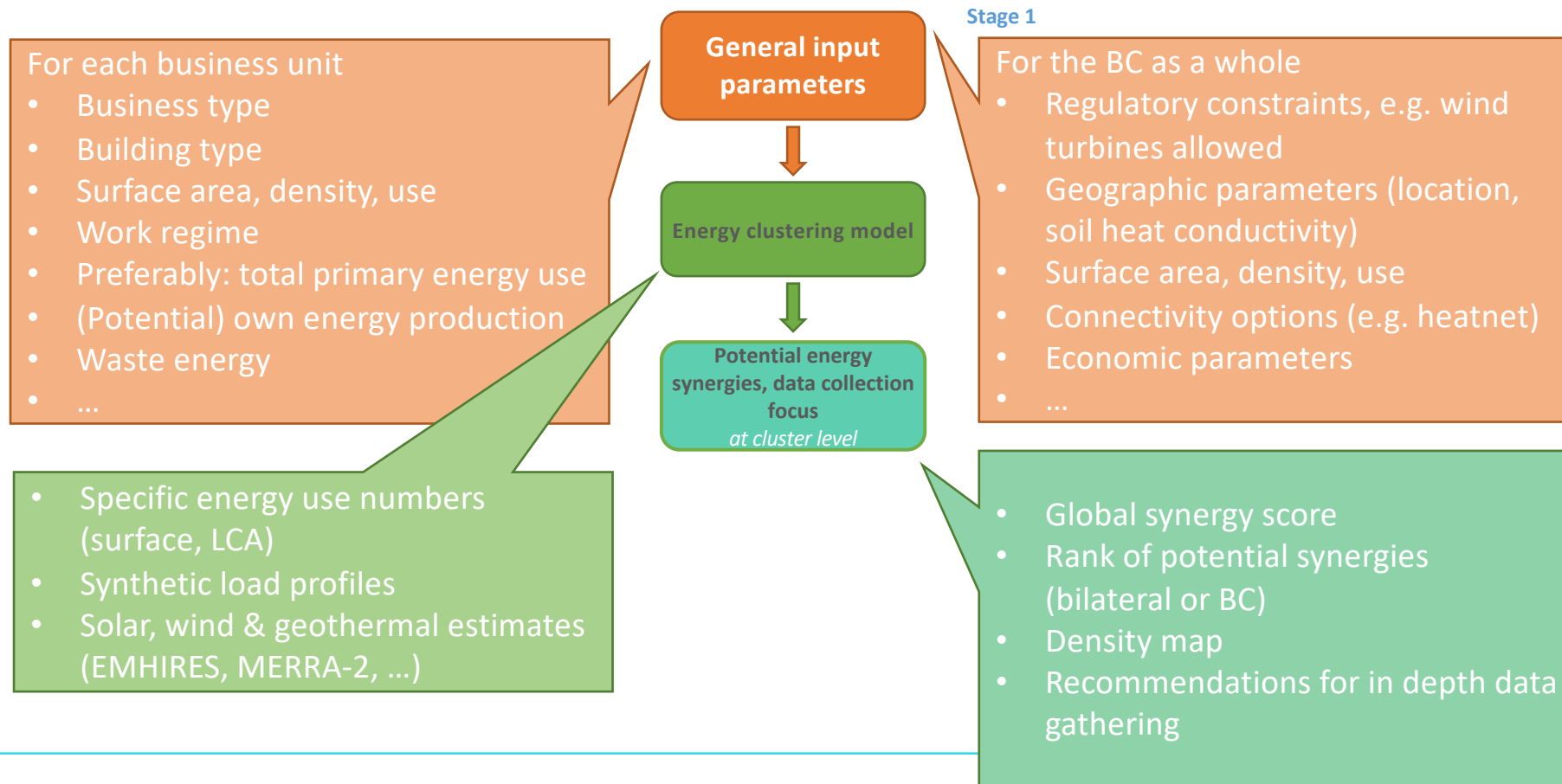
For the BP as a whole

- Regulatory constraints, e.g. wind turbines allowed
- Geographic parameters (location, soil heat conductivity)
- Surface area, density, use
- Connectivity options (e.g. heatnet)
- Economic parameters
- ...

REACT model structure in depth



REACT model structure in depth

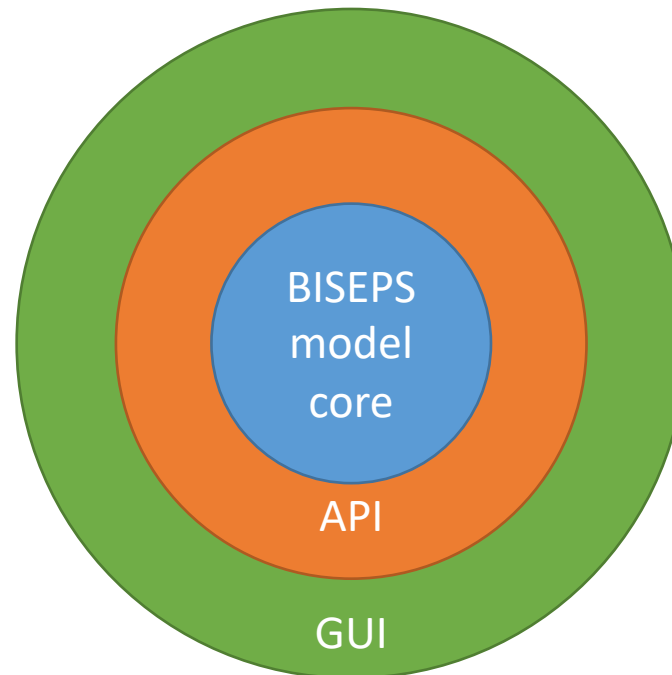


REACT standard vs greenfield tool

Standard	Greenfield
Real energy consumption, if possible, characteristic indicators as fallback	Characteristic indicators
Heat piping length based on zoning, if possible, surface-based estimation as fallback	Heat piping length based on surface-based estimation
Free creation of processes	Fixed number of processes
Visual zoning tool	Visual zoning tool

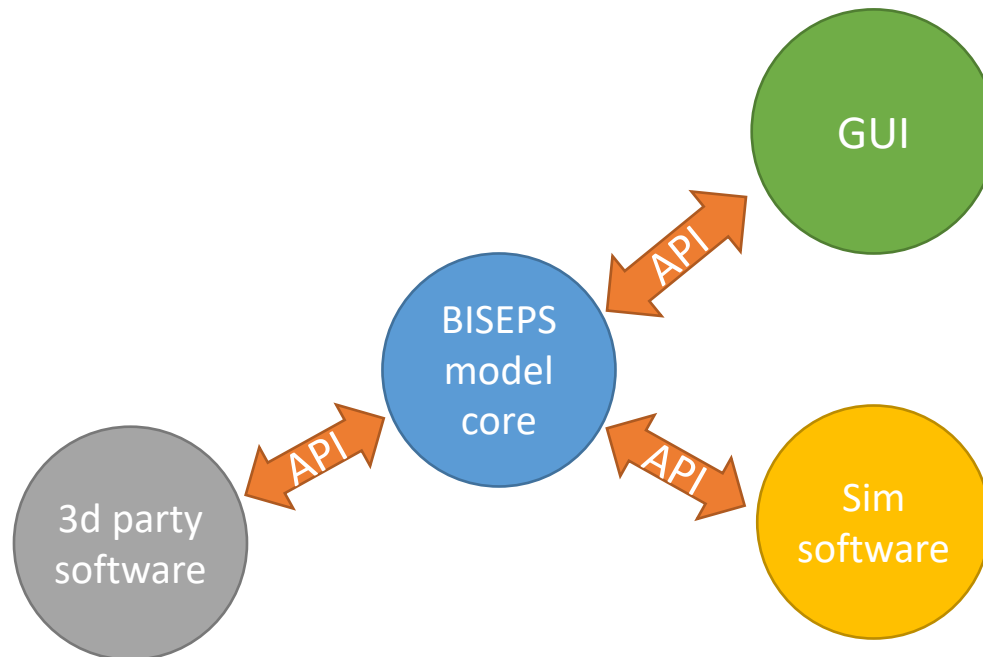
REACT – Internals

- Fully webbased
- Python based core model
- RESTful API to interface with any Graphical User Interface or third party software



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Release

Standard tool

- Available at <https://react.biseps.eu>
- 3 languages
- Manual included

Greenfield tool

- April 2021
- Same url

Source code release

- April 2021
- <https://github.com/Biseps-REACT/REACT>

Call to action

Measurement is key

- Lack of (qualitative) energy use data often key source of uncertainty
- Totals are a start, profiles (day, week, season) are better!

Need for real-time energy measurement

- At least on the main offtake point
- Preferably also on individual processes or large consumers
- Process and save energy data at least once a year

Future proof your business

- Implement energy meters on new installations or renovations
- Simplify add-on energy metering, e.g. current clamps, reserve power breakers, ...

