

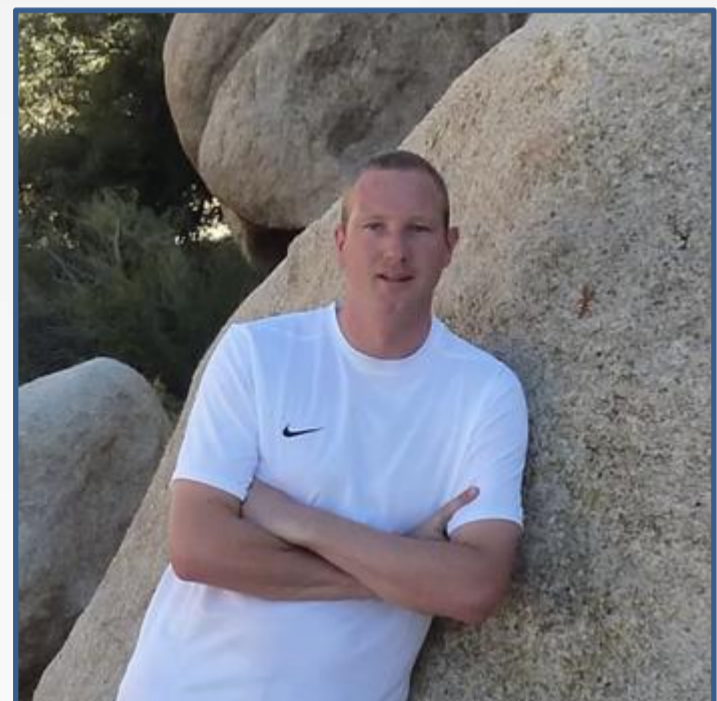
FLEXIGAS

a smart Biogas grid

Modeling decentralized energy systems

A tool for analyzing, researching and modeling energy efficiency, sustainability, and flexibility of biogas chains operating as load balancer within decentralized smart energy systems.

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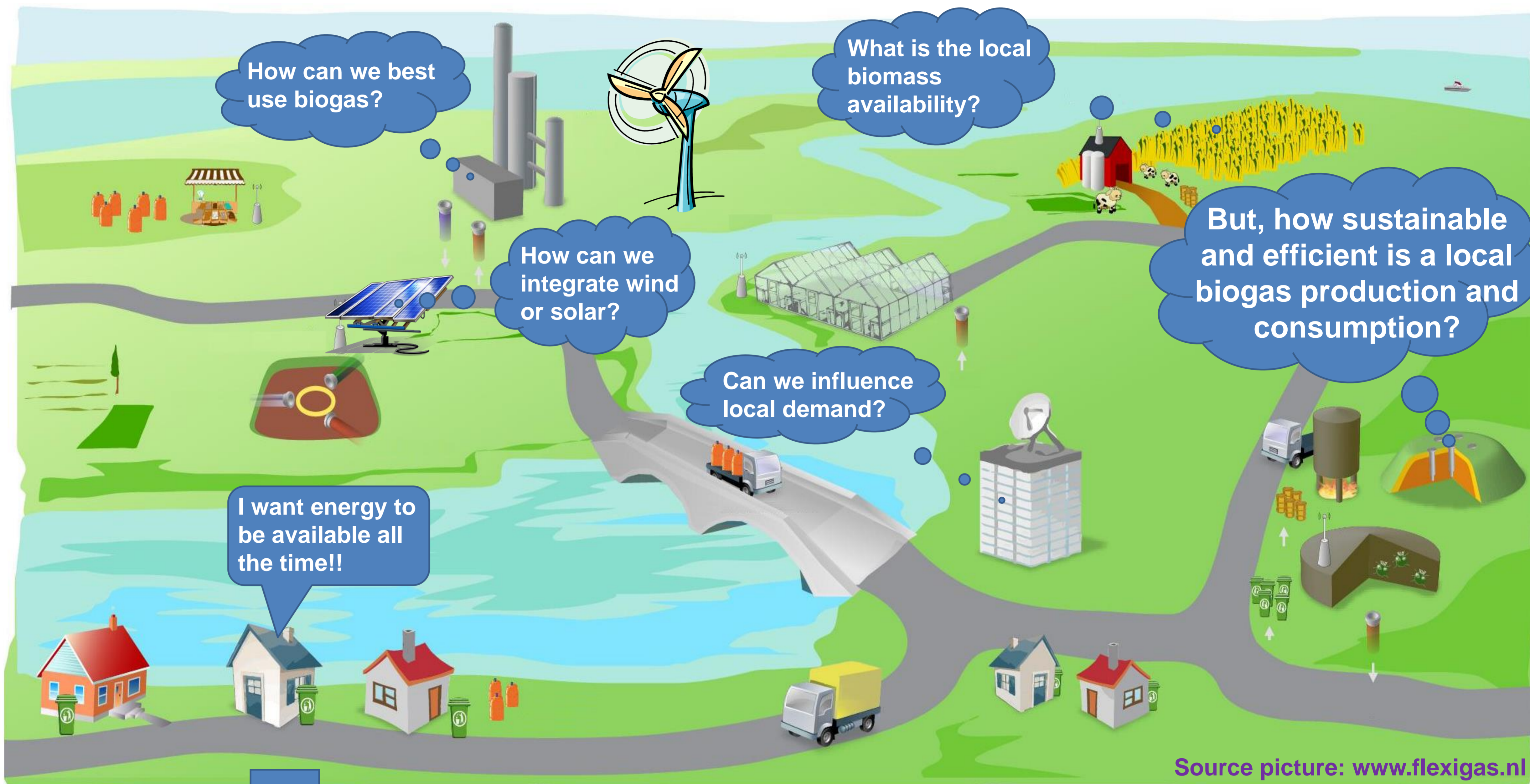
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Source picture: www.flexigas.nl

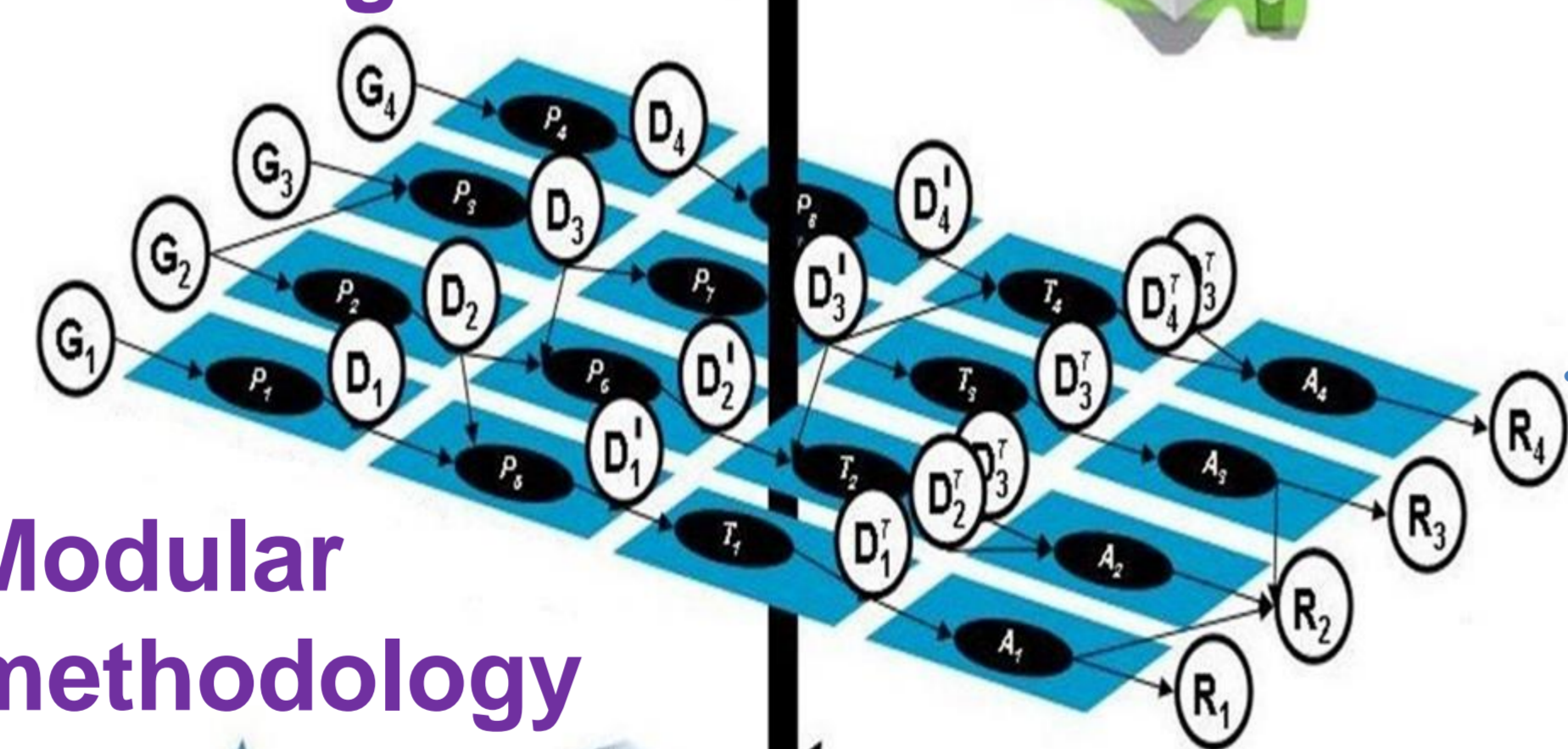
Realistic interface



The map based user interface

The graphical user interface, based on Google maps, will be transparent and understandable. It will indicate local biomass availability, transport distances, local demand and more. On this map biogas production chains can be constructed through the use of building blocks e.g. substrate source, digester, upgrader etc.

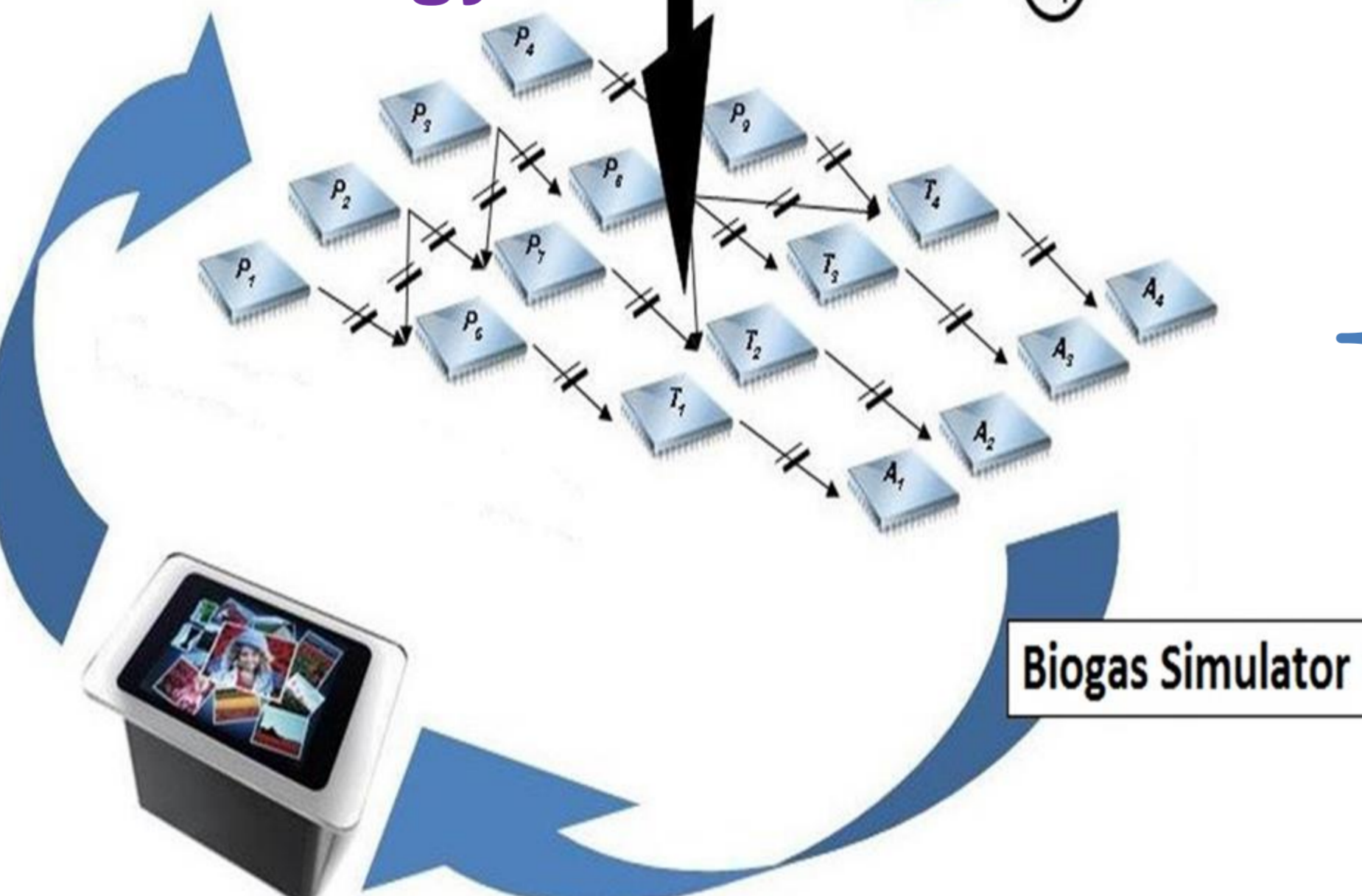
Dynamic modeling



Dynamic model

The chain of building blocks created on the map will be dynamically modeled with open Modelica. The use of cloud computing will make multiple scenarios and multiple variables per scenario possible. Modelica can theoretically house an infinite amount of blocks.

Modular methodology



Methodology

The method, used in Modelica is based on Dynamic Flow Analysis and Life Cycle Analysis, capable of calculating the Energy Returned on Invested, Carbon footprint, sustainable impact and economical cost of every building block.

Source picture: Flexigas project

Interested? Please grab a handout!

Feedback or remarks?
Please let me know!
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Thank You!

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