F L E X I G A S

a smart Biogas grid

Modeling decentralized energy systems

Optimizing decentralized load balancing through the use of locally available gas resources.

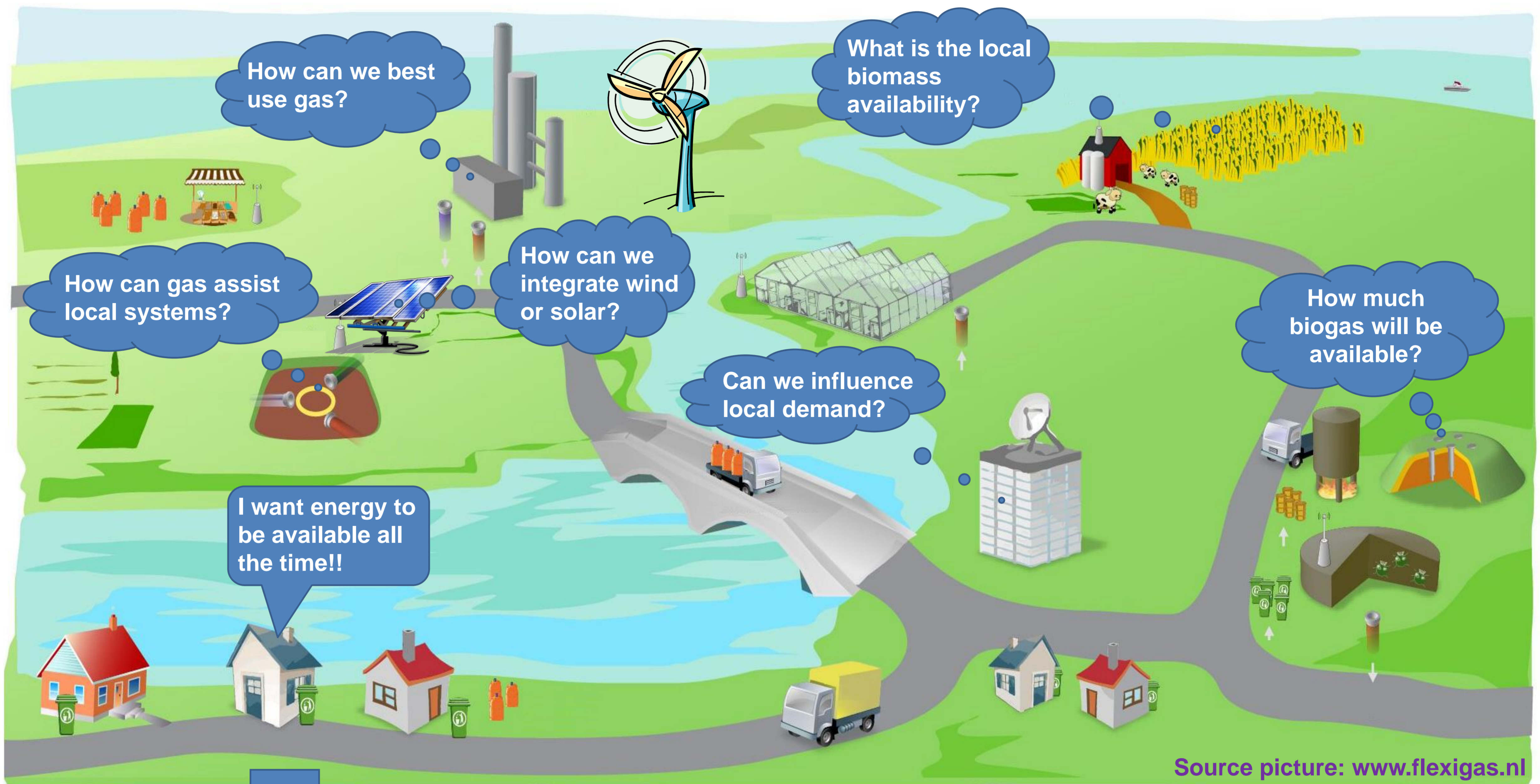**PhD. Researcher:**
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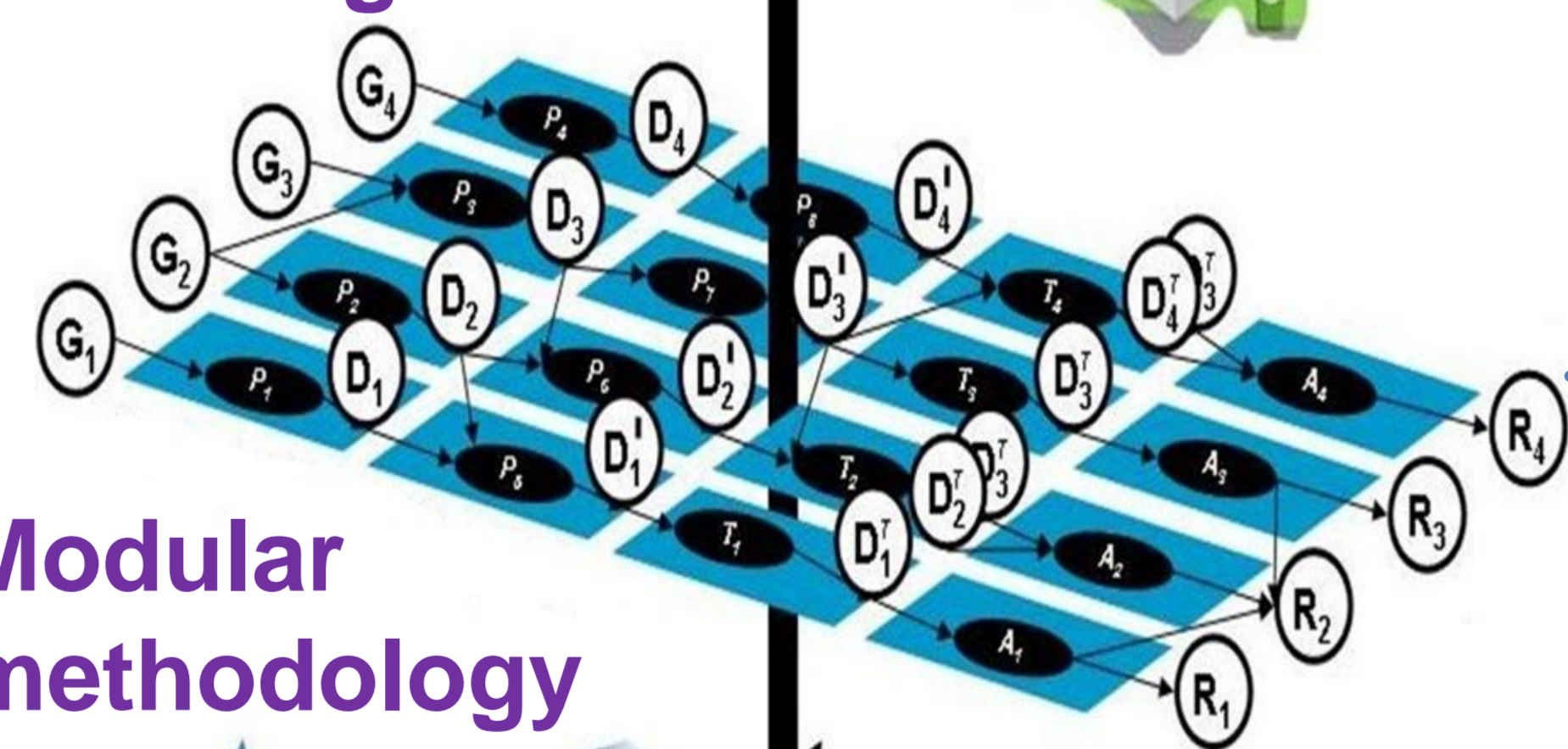
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How can we best use gas?

What is the local biomass availability?

How can gas assist local systems?

How can we integrate wind or solar?

Can we influence local demand?

How much biogas will be available?

I want energy to be available all the time!!

Source picture: www.flexigas.nl

Realistic interface

Dynamic modeling

Modular methodology

Smart Simulator
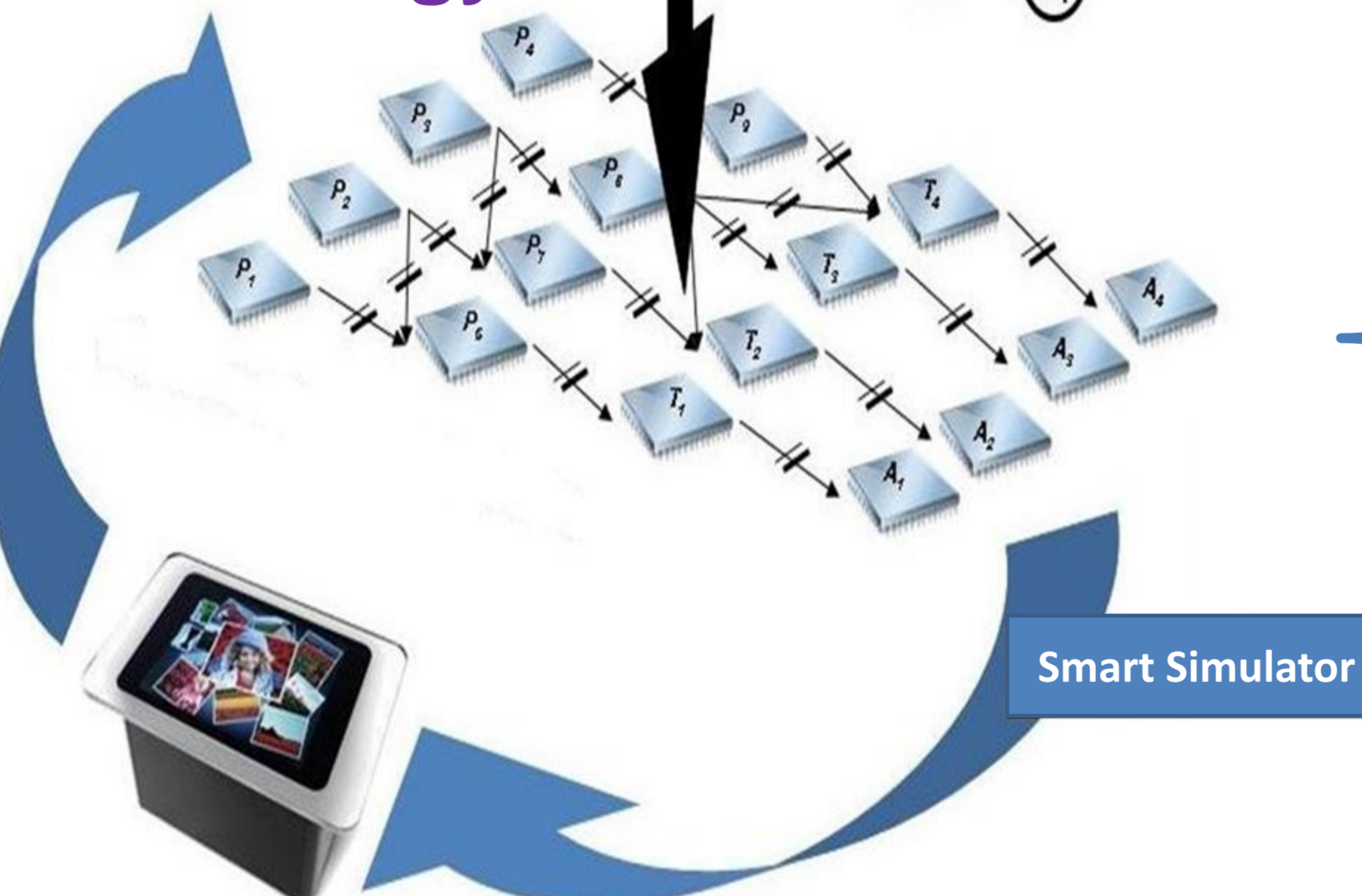
Source picture: Flexigas project

The map based user interface

The graphical user interface, based on Google maps, will be transparent and understandable. It will indicate local energy availability, transport distances, local demand and more. On this map biogas production chains can be constructed through the use of building blocks e.g. fuel cells, combined heat power, etc.

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.

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.

Interested? Please grab a handout!

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

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