



Picture: Finn Mac Ginty; [flickr.com/photos/finnsnaps/](https://www.flickr.com/photos/finnsnaps/)
Cloughjordan Ecovillage.

Florian Reinert M.Sc, Dr. Jens Clausen, Dr. Erik G. Hansen

Why Companies do district heating:

The business model perspective

Summary

Business Models
Research Design
Questions
Results
Implications

sustainable energy
systems need more
district heating.

- future-proof
- love renewables
- safe and reliable
- control energy costs

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U.S.-Botschaft senkt CO2-Verbrauch dank Fernwärme



Die Vereinigten Staaten in Wien setzen zur Wärmeversorgung ihres Botschaftsgebäudes auf die Technische Universität (TU Wien) bestätigt mit einem Zertifikat, dass sich das für die durch die Nutzung der umweltfreundlichen Fernwärme-Technologie von Wien Energie hat. Die U.S.-Botschaft in ihrem Gebäude in der Boltzmannngasse alleine seit dem Jahr 2001 3.493 Tonnen an CO2-Emissionen eingespart.

→ The US Embassy in Vienna uses "green" district heating.

Everybody want 's energy
services...





Most people care for
the planet if it's not
too much effort or too
expensive.

...but who will build
new district heating
networks as sustainable
energy systems?

District heating faces stiff challenges:

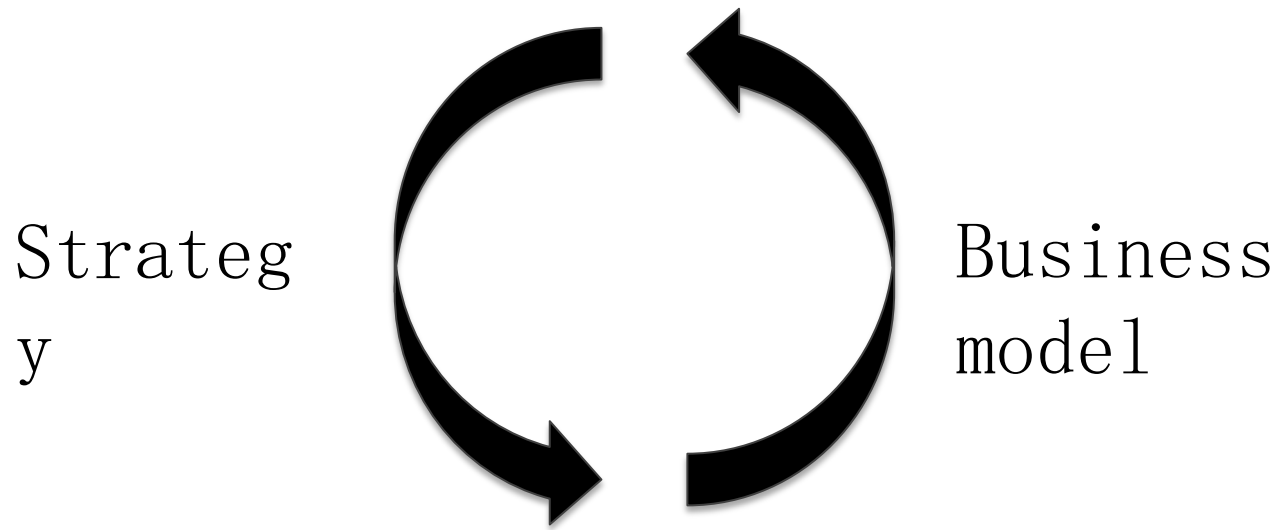
- Large upfront invest
- Sunk costs/path dependencies
- Long payback
- Maintenance
- Contested market

Who would do business in such an environment?

Often
business
research
is about
strategy.



A chicken-egg problem

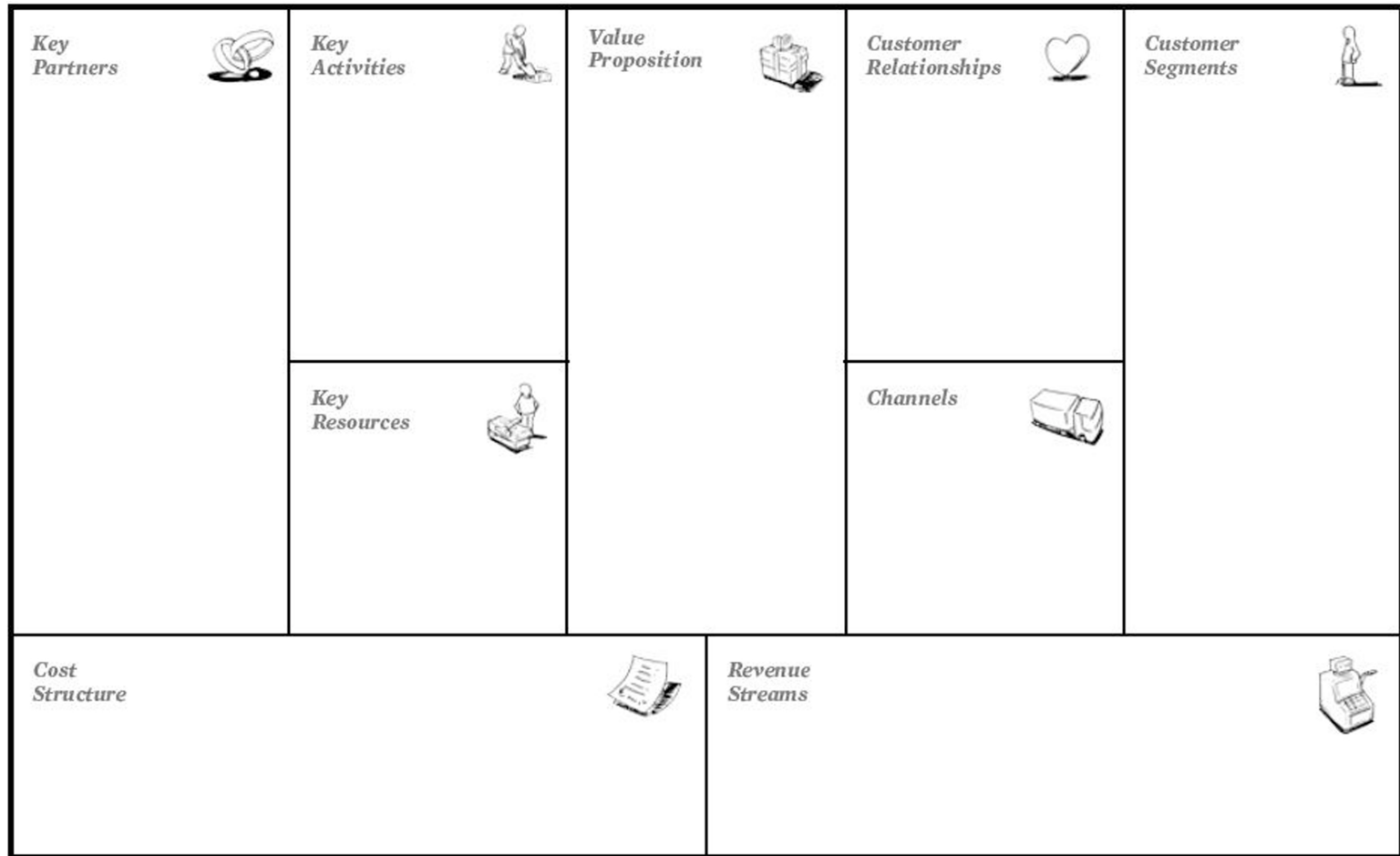


- If you lack a strategy you have no idea where you're going,
- if you lack a business model you have no idea how to get there: you need both.

A tool is
needed to do
research on
companies.

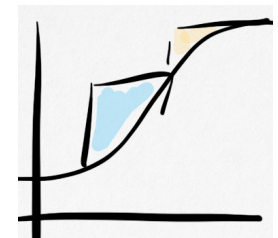
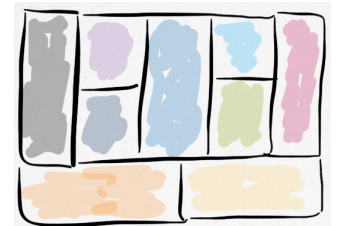
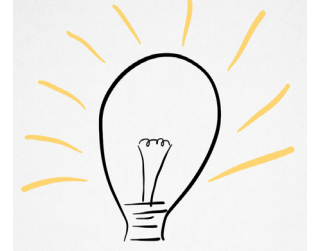


A business model explains how a company creates value

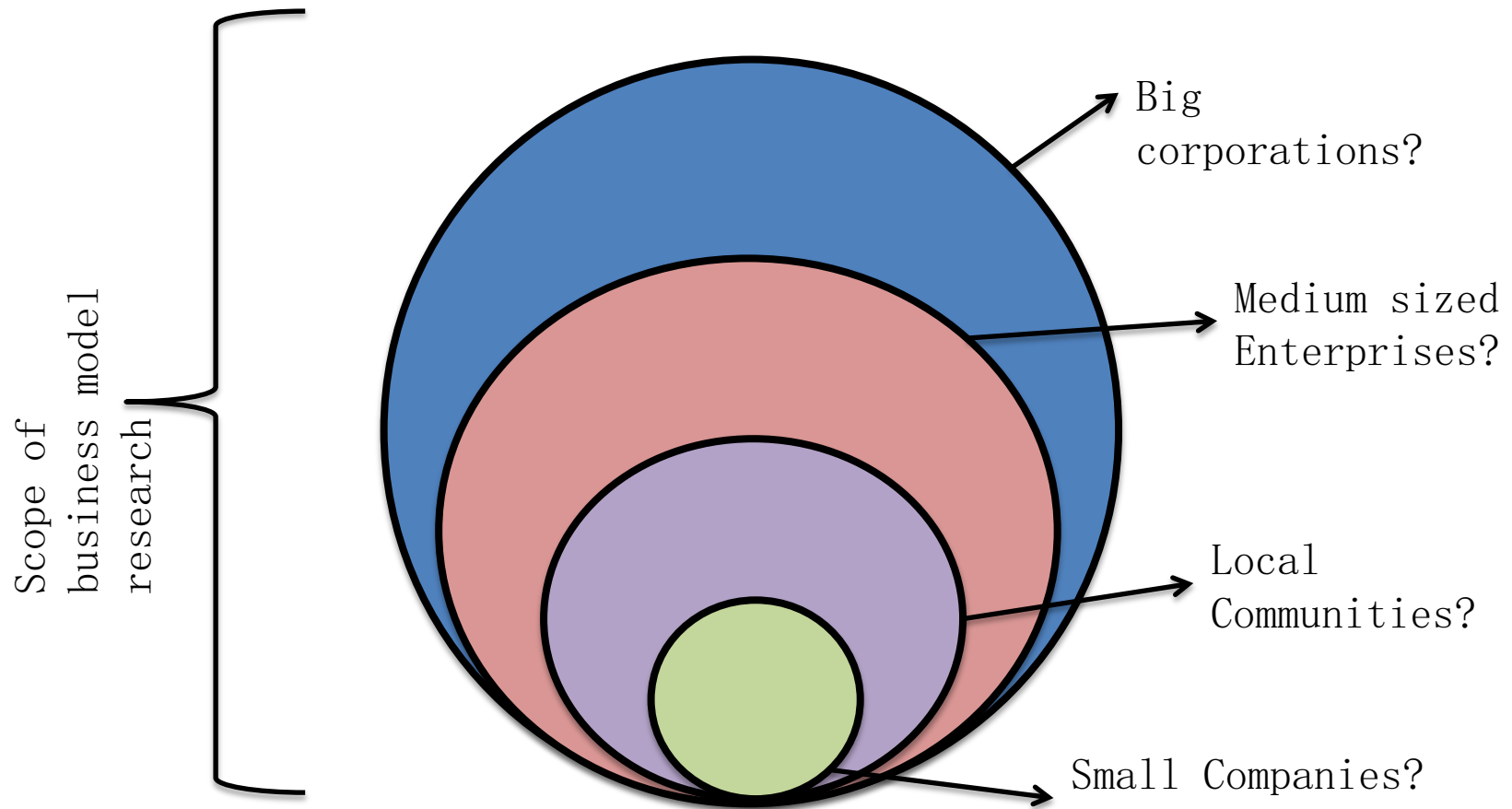


A business model perspective

- New business models are needed for new energy solutions
- Technology is not enough:
It is empowered through a business model
- Business model helps to bring innovation to market
→ motivates key actors

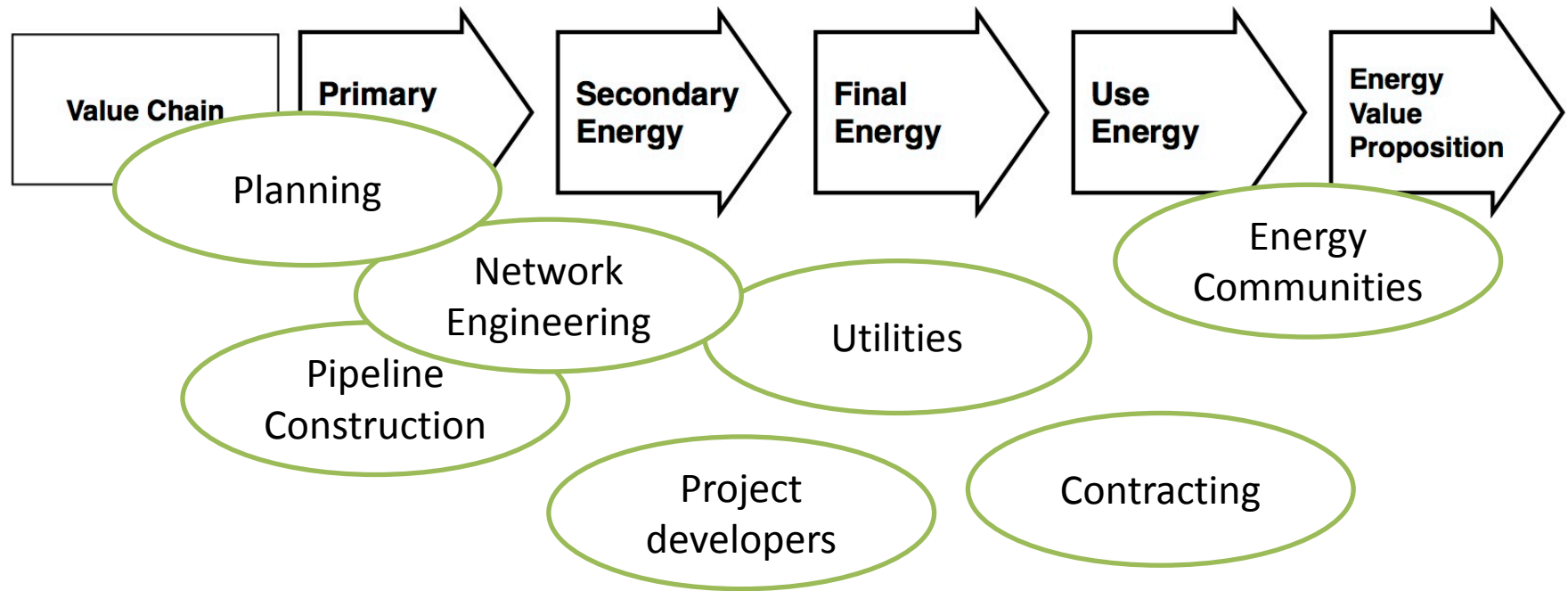


Who will put forward sustainable energy systems as part of a business model?



Research Design

- Interview Study
- 16 participants
- Semi-Structured
- Anonymous
- Across heating sector: Planning, Engineering, Pipeline, Contracting, Utilities and Energy Communities
- Field time: Summer 2012 (MSc Thesis)



From construction to operation

„Netzbau ist ein punktuelles Geschäft: Projekt anstoßen, Projekt bauen und an den Kunden übergabegeben, dann raus aus dem Geschäft. Während dessen im Netzbetrieb die Sicherstellung der Netzsicherheit über den kompletten Lebenszeitraum des Netzes darstellt, also ein ganz **anderes Geschäftsmodell**, das da hinter steckt.“

“We follow the trend – the consumer is in charge. If he wants better warmth and is willing to pay for it, he will get it from us”.

„This is what a bigger company can
do:

It is necessary to try things a
smaller company could not recover
from (...) “

Operator of A Geothermal Network

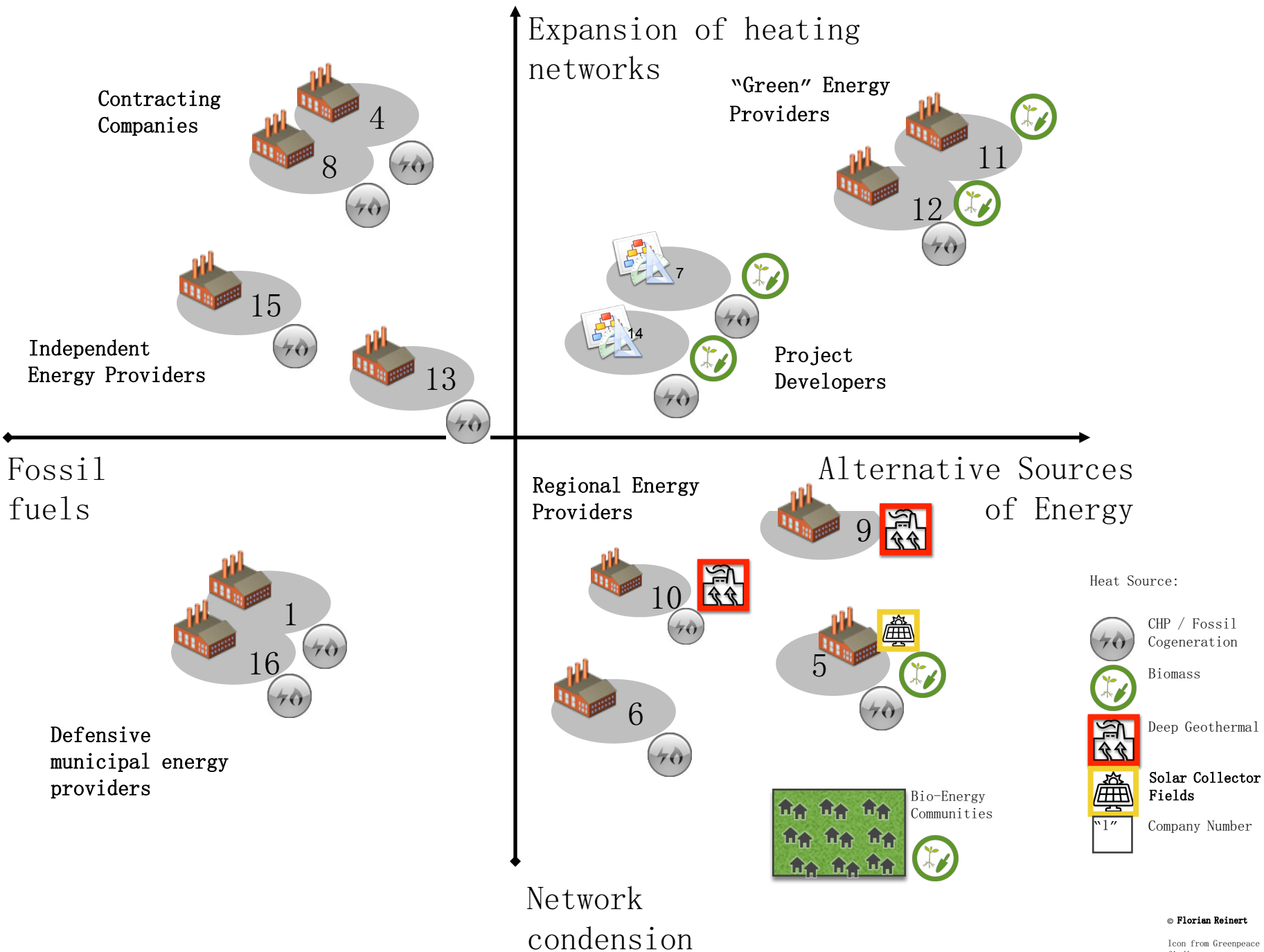
“It is not our goal to begin own initiatives in solar thermal energy or anything alike because it's simply not our mandate”.

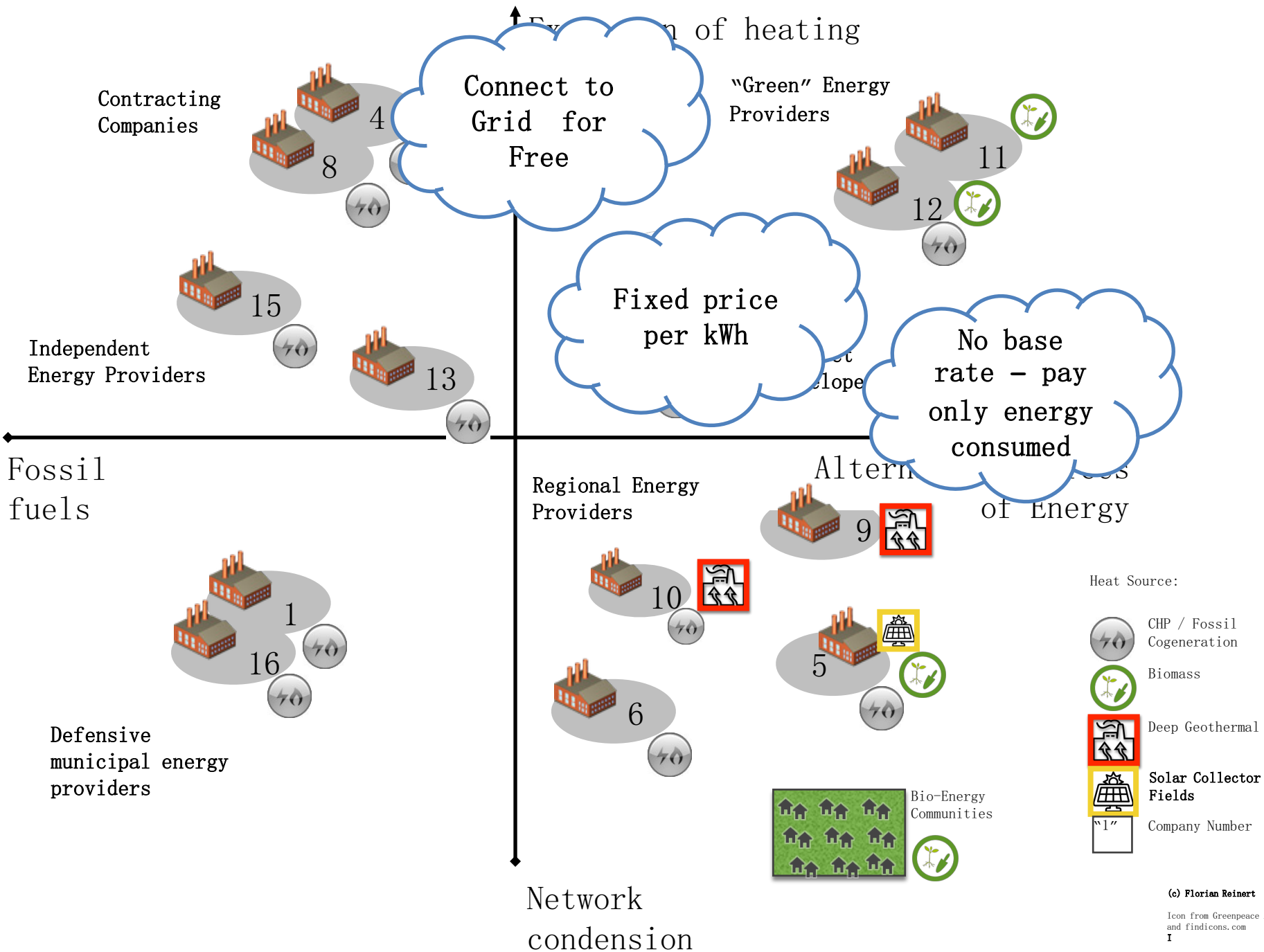
→ solar- thermal energy could have a negative effect on the profitability of the geothermal heat source, especially during summer when it would generate large amounts of energy at costs falling below marginal costs of geothermal energy.

→ This points to a situation in which renewable sources of energy not only face competition from fossil fuel technologies but also from other renewable sources of energy!

Operator of an (also) Solar-Network

“We have constructed innovative facilities ourselves and operate these, for example solar collector fields and a wood-fired plant. I think one could built even better facilities but we are constrained by our size to promote this further.”





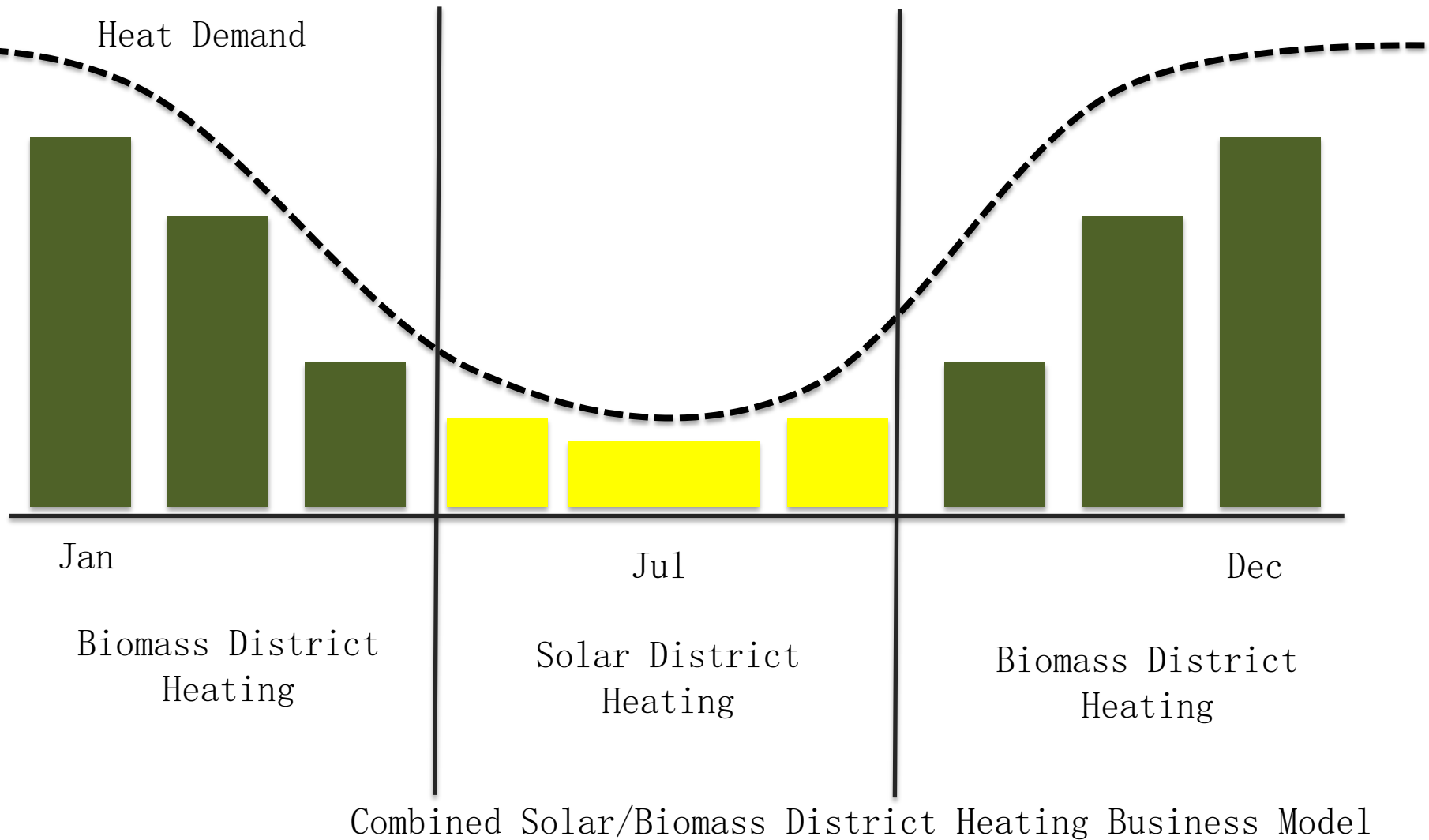
Observations

- only few companies actively develop heating networks using alternative sources of energy
- near-to-market technologies such as CHP or biomass are frequently used together with a heating network
- large scale solar or excess heating even seem to lack a business model

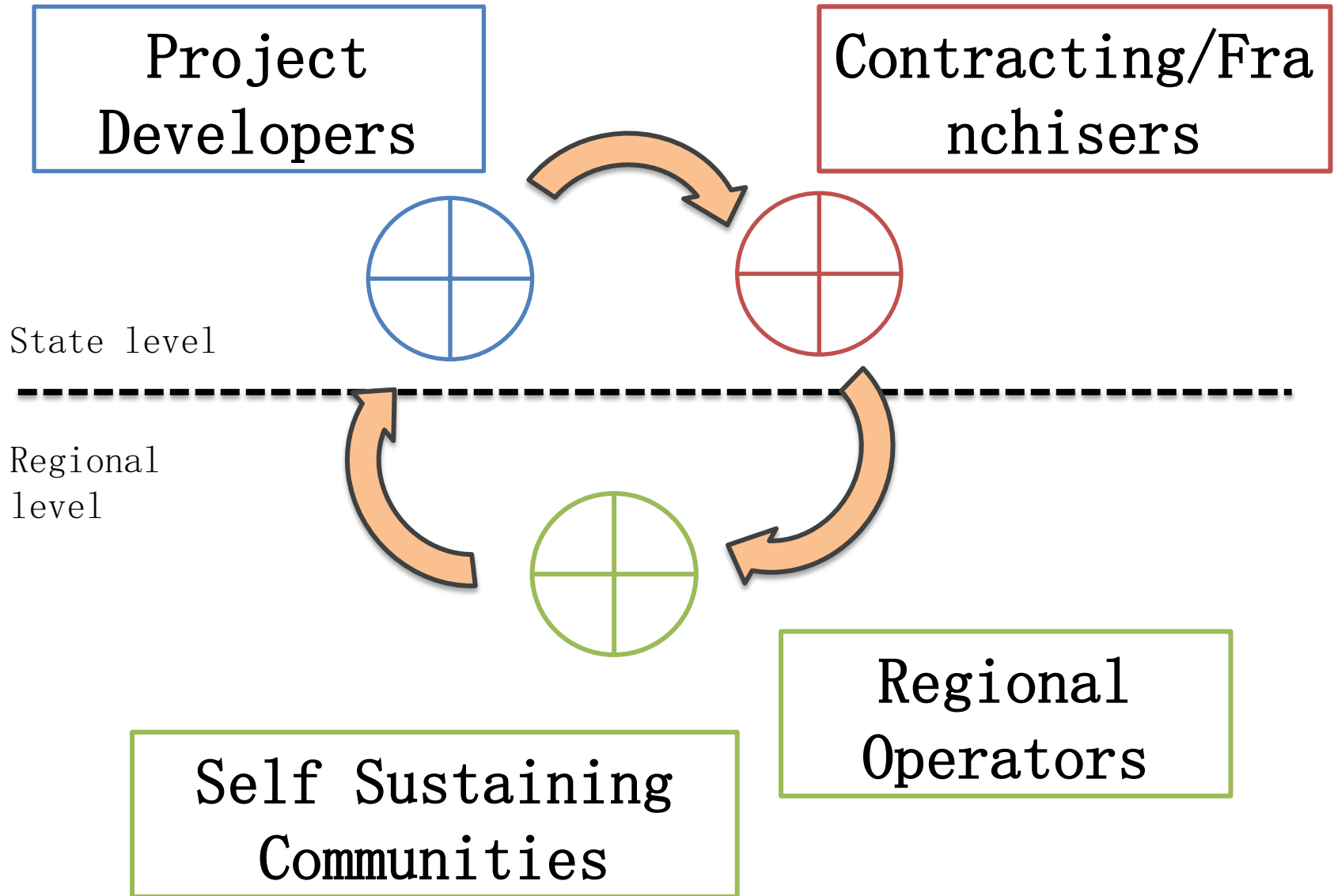
Conclusion

- A stable architecture of value creation does not inherently hinder the evolution of the heating industry
- Dynamic architectures of value creation contribute to the expansion of district heating networks but fail to integrate alternative sources of energy due to a price-competitive market that encourages companies to prefer developed technologies over radical innovations.
- Certain alternative sources of energy (deep geothermal energy, solar energy, waste energy) lack a business model which encourages expansion to new markets. Mature technologies like fossil- and biomass CHP seem to encourage regional vertical integration whereas radical technologies for alternative sources of energy seem to demand strategic partnerships between regional and national actors.

New Business Models take root



New business model landscape



Thanks



@florian_r

florian.reinert@mailbox.org

+49 (0) 176 647 14 390

Athenga GmbH Bonn/Berlin

Time for Questions

If we knew what we were doing, it wouldn't be called Research.
-A. Einstein

Backup

Which business models allow new networks and renewable energy?

