

# From demonstration projects to volume market

Preliminary conclusions from  
IEA SHC Task 37

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HUSBANKEN      SEGEL AS





Measured: 68 kWh/m<sup>2</sup> year



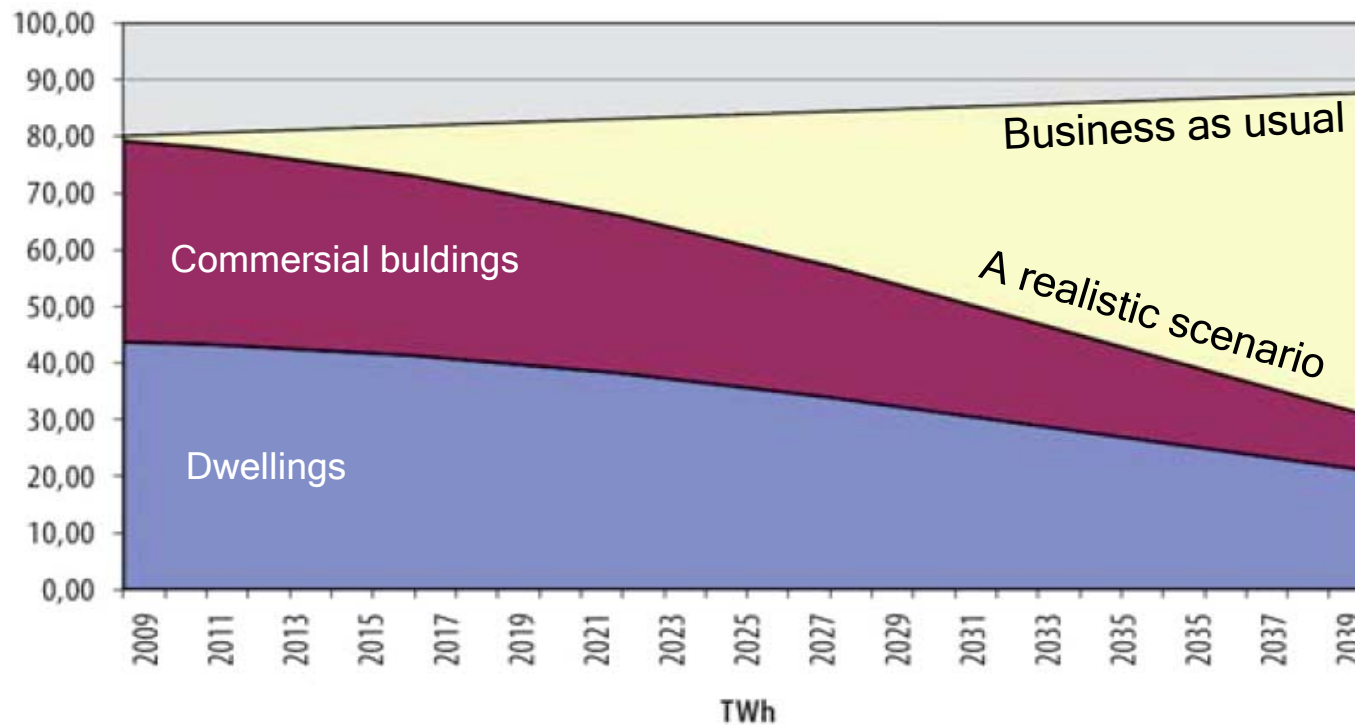
Calc: 92 kWh/m<sup>2</sup> year

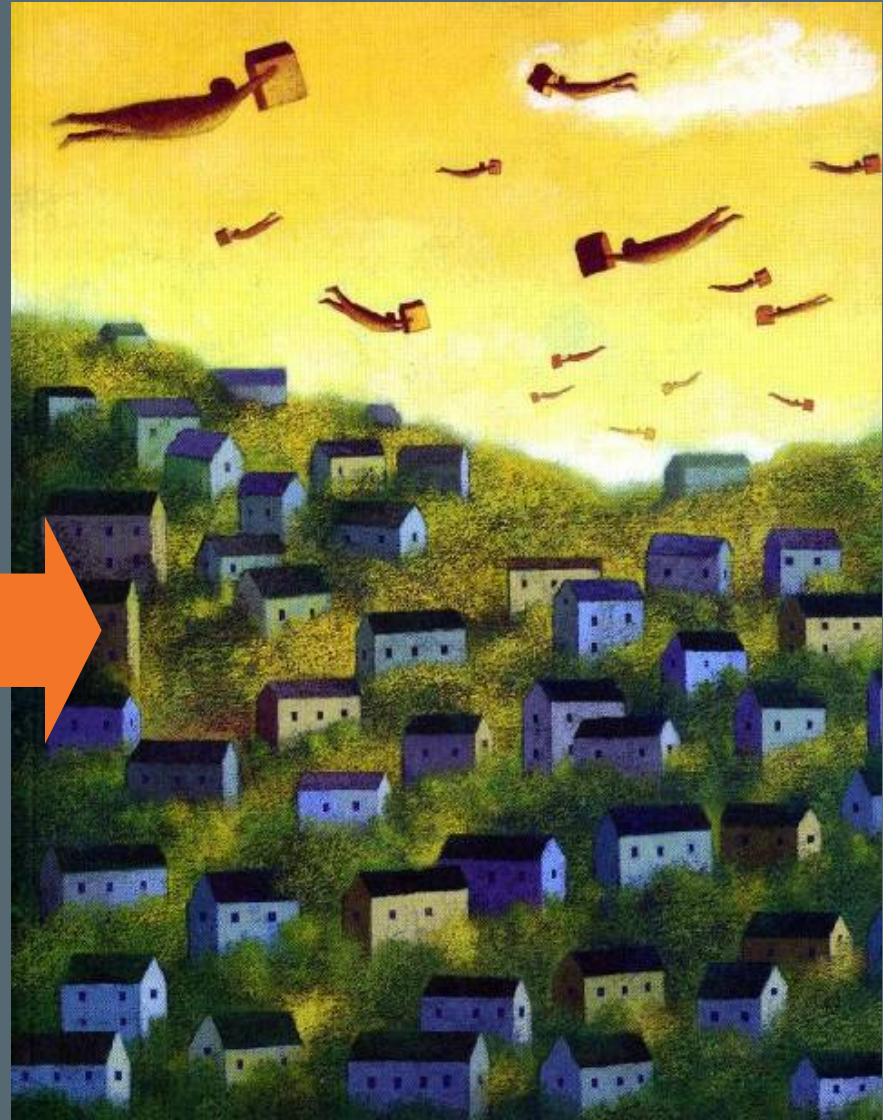




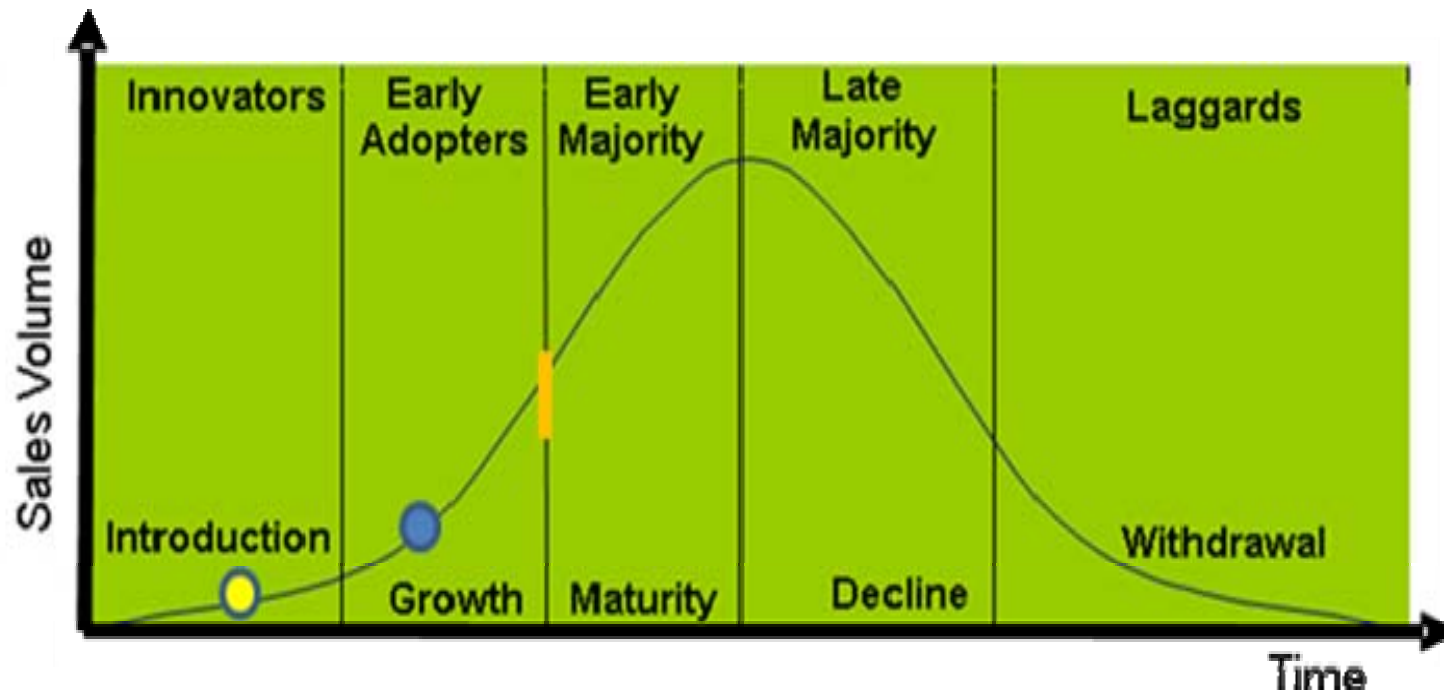
Ministry of Petroleum and Energy :  
Report on Energy Efficiency  
In the Building Sector  
25th of June 2009

## The potential (both new construction and renovation)





# From demonstration to volume market

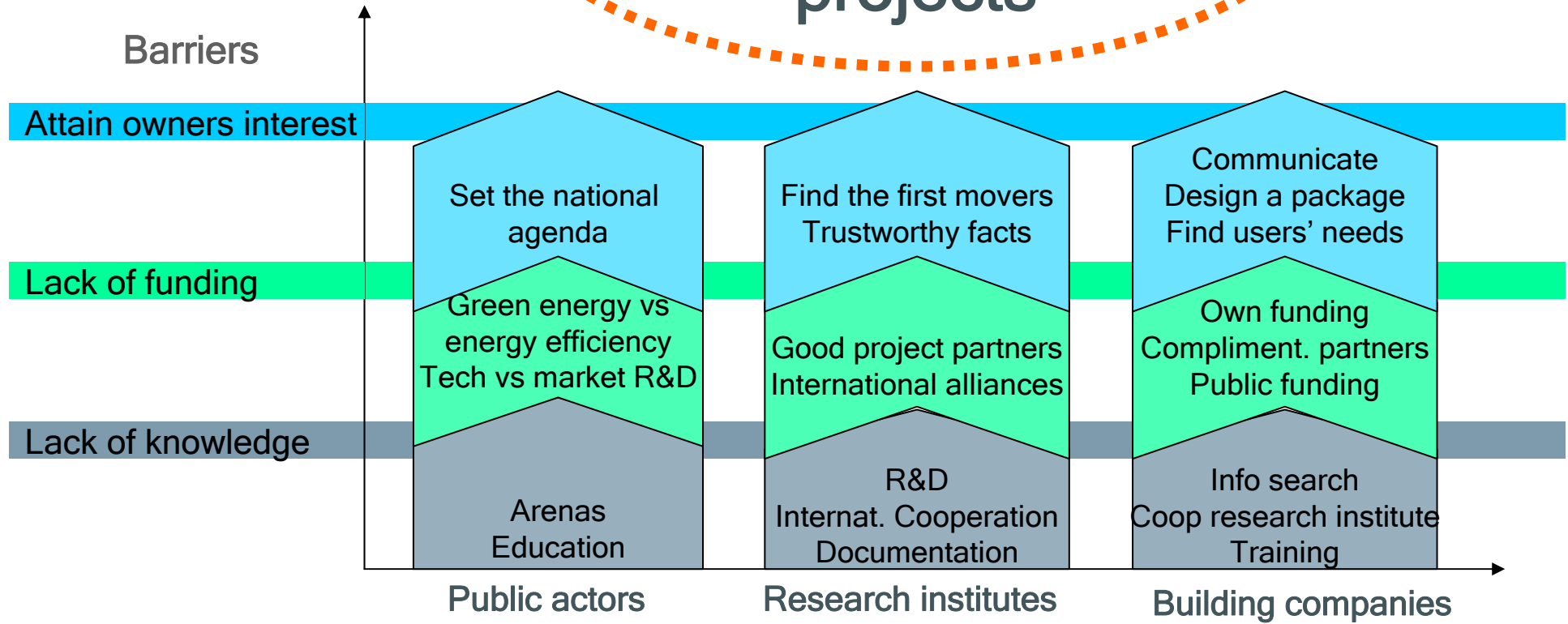


The Product Life Cycle



Introduction phase:

# Successful demonstration projects



Public actors

Research institutes

Building companies

Innovative actors

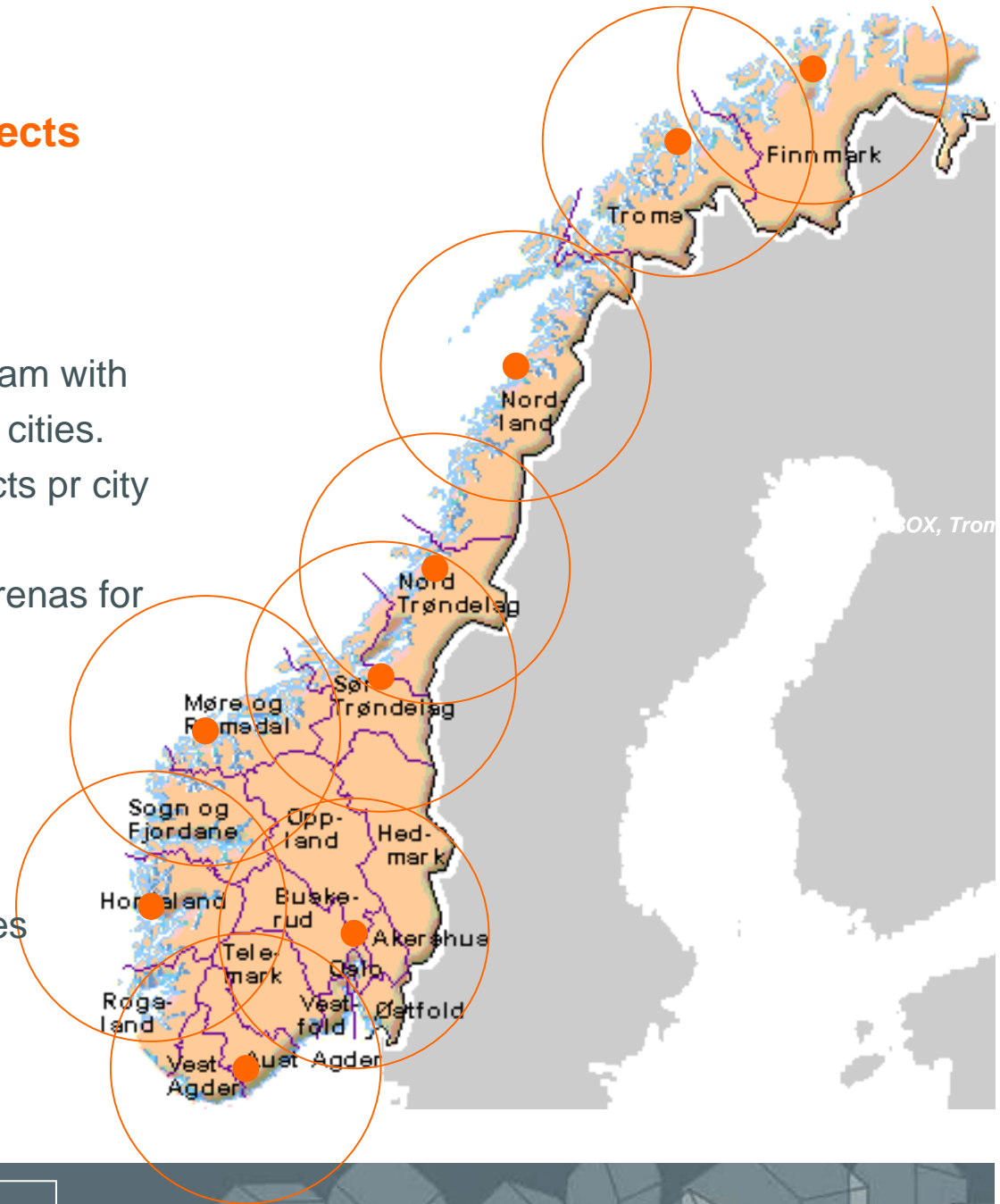
## A chain of demonstration projects

”Cities of the future” :

- A Norwegian cross departmental program with
- participation from the 13 biggest cities.
  - minimum 2 demonstration projects pr city

- A chain of demonstration projects as arenas for
- research
  - education
  - setting the agenda
  - development of regional markets

Cooperation with several other initiatives



Growth phase:

Spread competence,  
demand and supply

Barriers

“Added value” is unclear. Both on supply and demand side

Scarcity of knowledge and quality assurance

Lack of cooperation and coordination  
Locally and nationally

Develop “one stop shops” for complete solutions  
Public buildings as showcases - boosting the demand side  
Implement tools which create advantages for complete solutions

Post educational programs on all levels and involved professions  
Implementation of EPBD - focus on QA  
Demo projects as showcases and learning

Networking through the supply chain  
Create arenas for all actors to meet  
Masterplans developed by authorities

Local / national authorities

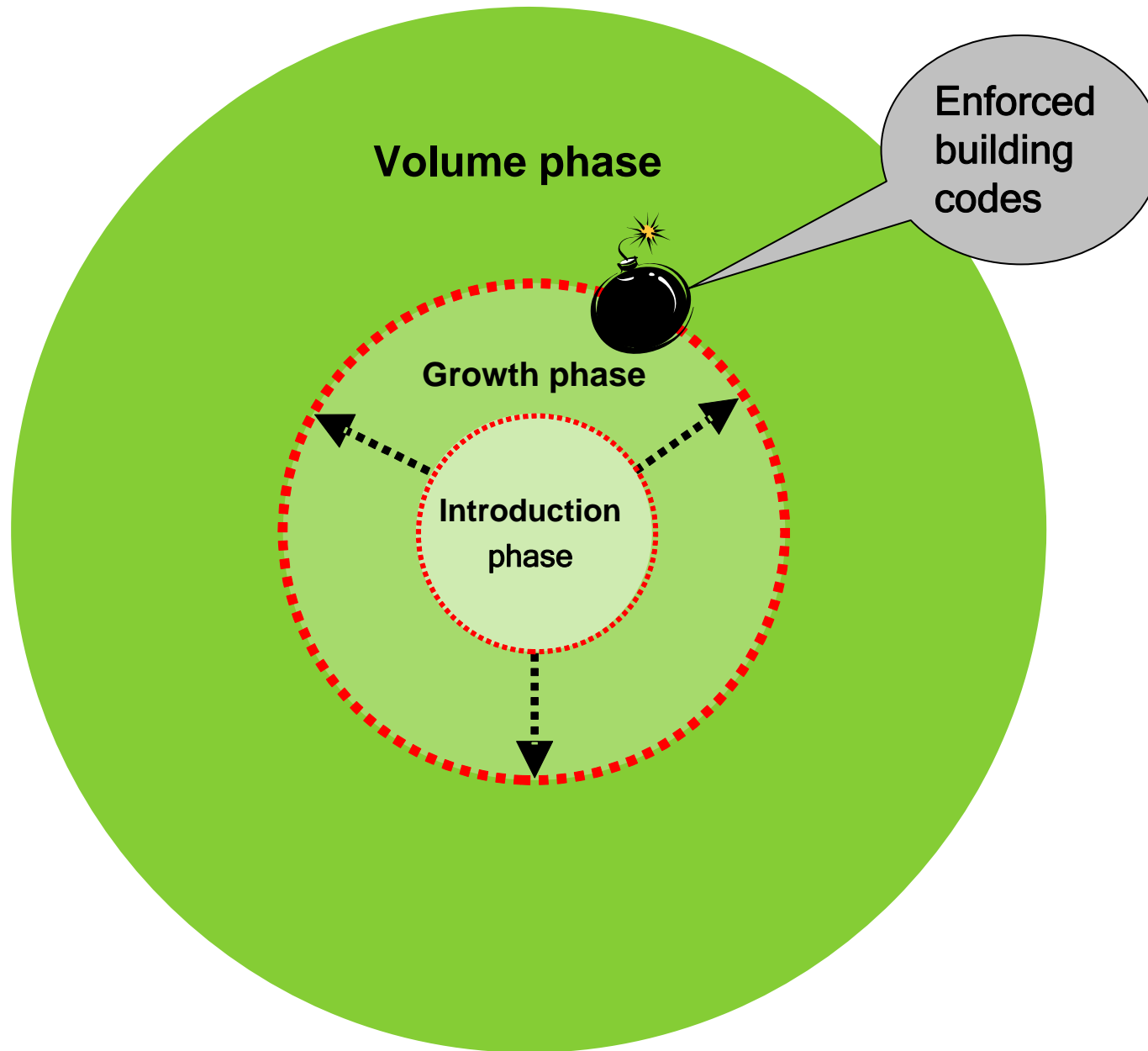
Research and education

Variety of companies

Actors

Early adopters







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announced stepwise enforcement of building codes  
for new construction and major renovation

Forskriftsnivå	Nybygg		Rehabilitering	
	Boliger	Yrkesbygg	Boliger	Yrkesbygg
TEK 2007 (kWh/m <sup>2</sup> per år)	130	155	160	170
TEK 2012 (kWh/m <sup>2</sup> per år)	100	110	125	130
TEK 2017 (kWh/m <sup>2</sup> per år)	65	70	85	90
TEK 2022 (kWh/m <sup>2</sup> per år)	30	40	50	55
TEK 2027 (kWh/m <sup>2</sup> per år)	0	0	30	40

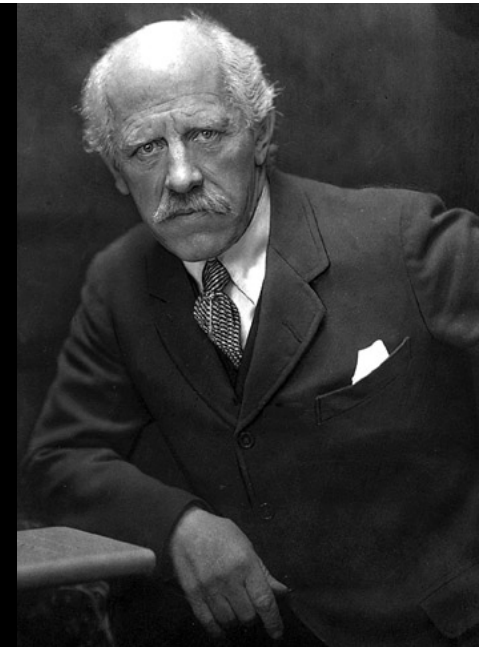
Tabell 3.8: Antatte nivåer for fremtidige byggeforskrifter fra 2007 til 2027, både ved nybygging og ved hovedrehabilitering. Kilde: Dokka (2009)



# FRAM



# FRITJOF NANSEN



## A passive house described in 1893

„... besides this, ceilings, floors and walls were made [air] tight and thermal insulating by numerous layers. [nearest to the warm room] on all surfaces there was placed air tight linoleum to prevent from condensation of warm humid air: the humidity would freeze otherwise very soon.

The walls are covered with tarred felt, followed by cork, then a layer of wood, a layer of felt, then linoleum and again wood.

The ceilings [...] have an overall thickness of about 40 cm. The windows where the cold could come in very easily was protected by triple panes and other means.

This is a warm and comfortable location. Whether the temperature outside is 5C or 30C below zero, we don't have any fire in the stove. The ventilation is excellent, for it drives fresh winter air through the fan downwards.

**I conceive to bring the stove outside, it just stands in the way. "**