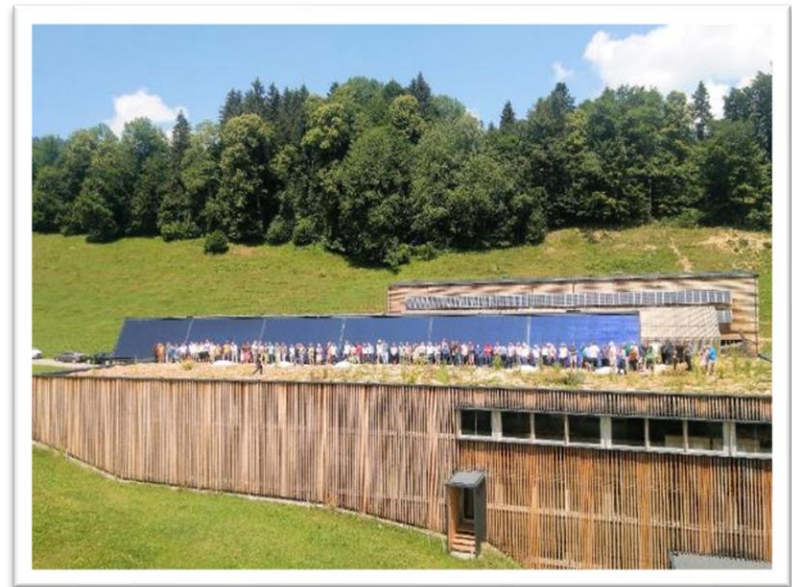


Public participation models for solar district heating: Example from Austria

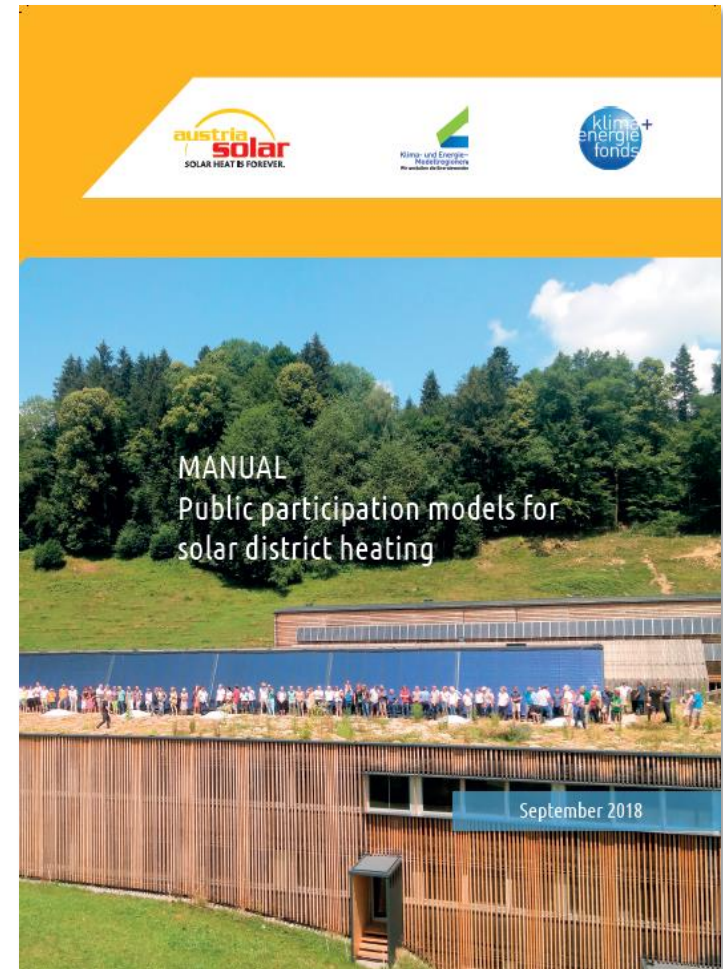
Roger Hackstock

Association Austria Solar



Solar district heating

- **Sun provides cheap heat
(5 – 7 ct/kWh)**
- **Public participation is
very popular**
- **Solar heat reduces part-load
operation of boiler in summer**
- **High market potential**



High market potential

| Federal State | Biomass heating plants with Summer operation | Biomass heating plants overall according to Bioenergieatlas 2016 | Accuracy of the estimation as a percentage |
|---------------|--|--|--|
| | Number | Number | % |
| Burgenland | 76 | 80 | 95 |
| Lower Austria | 280 | 560 | 50 |
| Upper Austria | 310 | 387 | 80 |
| Styria | 492 | 656 | 75 |
| Salzburg | 100 | 100 | 100 |
| Carinthia | 111 | 148 | 75 |
| Tyrol | 67 | 67 | 100 |
| Vorarlberg | 110 | 110 | 100 |
| Total | 1 546 | 2 108 | |

Source: ÖBMV Landesorganisationen, March 2018

Public participation models



Most suitable for public financing of solar thermal district heating

Practical Example **SOLID INVEST**



Source: Picfly.at Thomas Eberhard

SOLAR INVESTMENT

Construction of large solar thermal systems, both at home and abroad, and optimisation of existing plants

LOCATIONS

Graz, Arizona, Singapore

PARTICIPANTS

355 private investors

MINIMUM SHARE

Euro 500

SUM OF TOTAL INVESTMENT

EUR 2.5 million

RUNTIME

min. 5 years

DISBURSEMENT

annual interest rate at 4% of the loan amount

INFORMATION

www.solid.at/invest/

Practical Example SOLARE NAHWÄRME EUGENDORF



Source: Nahwärme Eugendorf

SOLAR SYSTEM

540 kW thermal capacity (772 m²)
278 MWh annual thermal yield

CENTRAL HEATING BOILER

3.5 MW wood chip boiler

LOCATION

Stettnerstrasse 2, 5301 Eugendorf

YEAR OF CONSTRUCTION

2010

PARTICIPANTS

about 130 private and municipal investors, all are customers in the district heating network

MINIMUM SHARE

1 m² of collector surface for
EUR 300

SUM OF TOTAL INVESTMENT

about EUR 160,000

RUNTIME

15 years

HEAT VOUCHER

350 kWh per m² collector are
credited to the heating bill annually

Practical Example

FERNWÄRMEGENOSSENSCHAFT BOCKFLIESS (CUSTOMER COOPERATIVE)



Source: Fernwärme Bockfließ

For solar thermal systems, there are yet no examples of cooperatives

DISTRICT HEATING

2.5 MW straw-fired boiler
1.7 MW wood chip boiler
1.75 MW oil boiler (peak load)

LOCATION

Fernwärmeweg 1, 2213 Bockfließ

YEAR OF CONSTRUCTION

2013

PARTICIPANTS

385 members (customer cooperative of district heating customers)

MINIMUM SHARE

EUR 364 (cooperative share at new connection to district heating)

MINIMUM HOLDING PERIOD

10 years

SUM OF TOTAL INVESTMENT

EUR 6.5 million

INFORMATION

<http://www.fernwaerme-bockfliess.at>

Practical Example

SOLARE NAHWÄRME ENERGIECONTRACTING GMBH



Source: Solare Nahwärme Energiecontracting GmbH

SOLAR SYSTEM

1.730 kW thermal capacity
(2,480 m²)
980 MWh annual thermal yield

LOCATION

Berlinerring 34, 8047 Graz

YEAR OF CONSTRUCTION

2007

PARTICIPANTS

4 shareholders

MINIMUM SHARE

Shareholder's capital investment

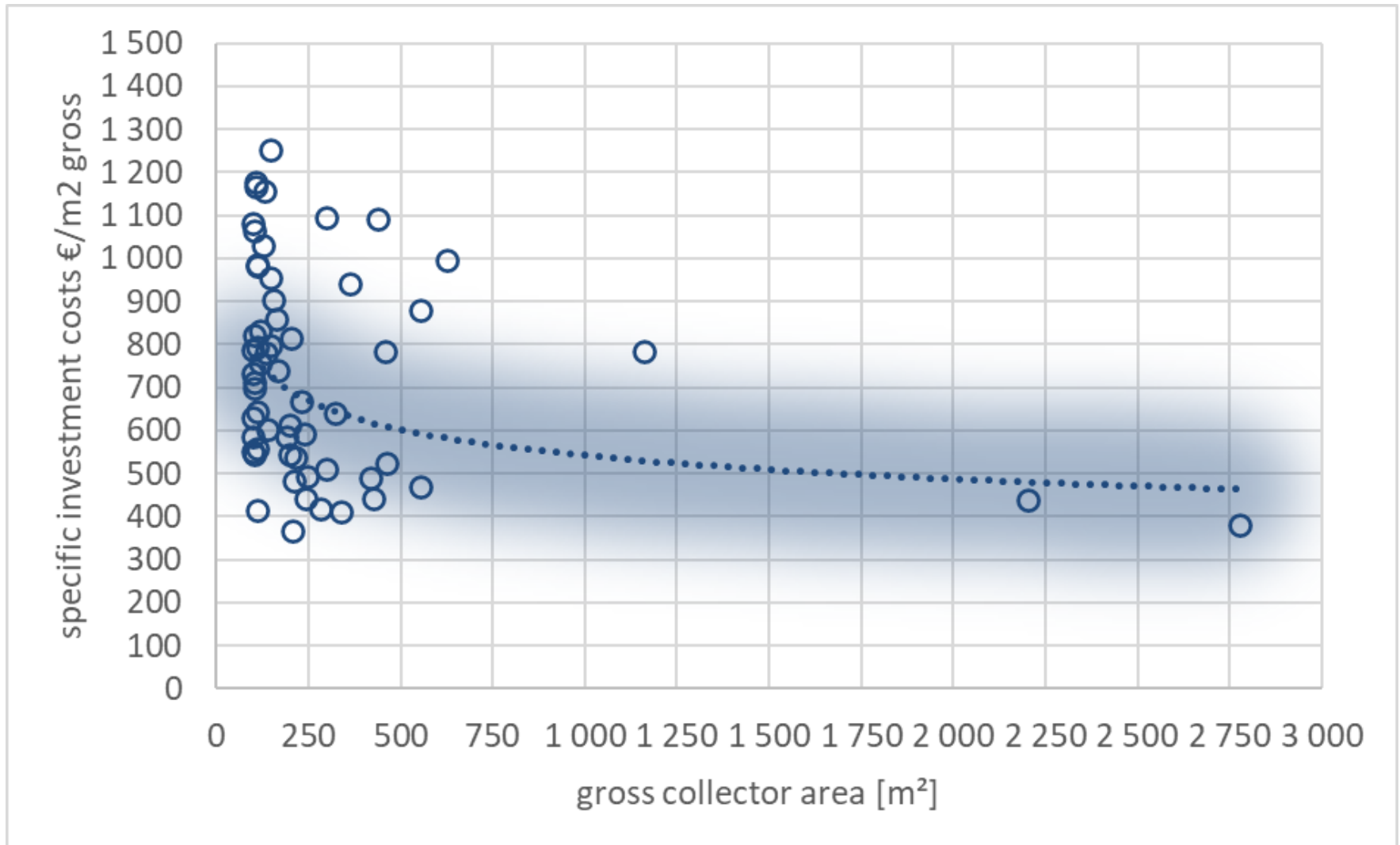
TOTAL PROJECT VALUE

EUR 1.1 million

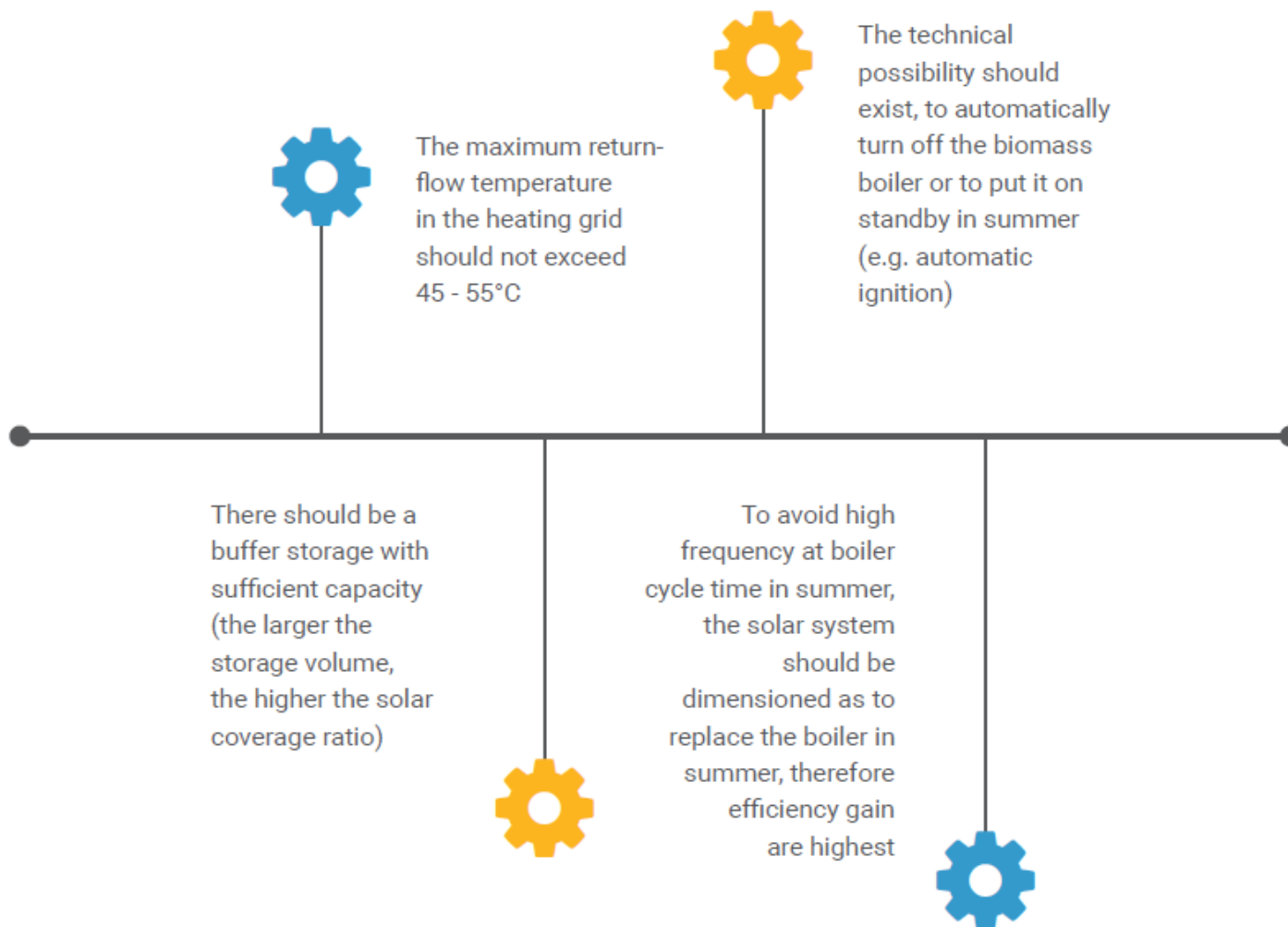
DISBURSEMENT

None so far, profits have been
reinvested, after 25 years, the
ownership of the investment reverts
to the owners of the apartments

Economic requirements



Technical requirements



- Subsidies for solar thermal energy at federal and state level
- Land availability (availability, location, size, dedication, price)
- Type of energy source to be substituted
- Need for relevant summer load
- Suitable network and system temperatures
- **Strong partnerships and keep at it stubbornly**



- After contacting project developers, quickly consult the responsible politician for the zoning
- Obtain support from environmental NGOs
- Personally promote as mayor the project to the responsible state offices
- Describe the story of the project, e.g. Friesach: connection of historical heritage with modern energy supply
- Communicate the benefits of the project locally, at events, in the local council, etc.
- **Play with open cards**



Josef Kronlechner
Mayor of Friesach



4 MW (5.750 m² collector area)
with public participation model
(sale & lease back)

Lets´ s harvest the sun!

