2 MSEK in prize money
- 1 MSEK from Vinnova
- 1 MSEK from the competition partners
Competition question(s)

• How can biological production units using low temperature residual heat – and possibly other residual flows for biological production – be organised so that they can be located in dense urban areas whilst also having the potential for side functions such as in-house shop, food processing area, opportunities for employment and spaces for community events and social meeting?

• How can the production process be organised to be space efficient whilst maintaining profitability?

• How can technical challenges such as heat storage, heat distribution and cycles of residuals be solved alongside the project’s ambition to create social value in the local community through the creation of employment, social meeting places and local distribution, sales and processing?
Practical implementation within a few years

- **Oskarshamn** as a model plant.
- **Bjuv** as a model plant for Bjuv Food Valley
- **Brunnshög i Lund** with the Brunnshög project and Ica
- **Malmö hamn** with Nyhamnen and industrial symbiosis with Norra hamnen
Step 1 Open Innovation Process

Finished with a two-days pitch-event in Alnarp 2-3 October 2017 and establishment of five competition teams.

Broad promotion nationally and internationally to get up to a hundred proposals.
Resultats from step 1

• 46 proposals submitted
• From 21 different countries
• 28 proposals invited to present at the pitch-event 2-3 October 2017 in Alnarp, 21 proposals attended
• Six teams had interest in becoming team leaders and five was invited to step two
Step 2 Interactive process with five teams

Submission of proposals
12 March 2018
Results from step 2

• 5 teams/proposals invited to step 2

• 3 proposals invited to step 3
  - Island, Samraekt ltd
  - Sweden (Malmö), Hemmaodlat ideell förening
  - Sweden (Göteborg), Tailormade arkitekter AB
Urban farming

Key partners:

Project Management & leadership
Urban Farming Company

Sweden-based project management
TBC

Technical design / Infrastructure:
- Grønt Skifte (Norway)
Green Phoenix

8. Diagram

- **RESIDUAL HEAT**
  - Low Temperature
  - District Heating
- **HEAT PUMP**
  - 30-60°C
  - Upgrade to 90°C
- **Hot Water Tank**
  - 50°C
- **ORC**
  - Electricity
- **Electric Grid (Backup)**
  - Space Heating
- **MUSHROOMS**
  - Mycelium and substrate
  - 16-25°C
- **BREWERY**
  - Fish Processing
  - Heat Pump
  - 15°C
  - Hops
- **AQUAPONICS**
  - Organic Waste
  - Liquid Digestate Fertilizer
  - Solid Digestate
  - Compost
- **CHP**
  - Methane (CH4)
- **Anaerobic Digester**

Green Phoenix Team leader: AquaBioTech, Malta
Partners: - Astronical, Spain - Brendan McGill & Andrew Bonneau, Germany - Sustainable Technologies, Italy
Growing together

Team leader: Samraekt Ltd, Iceland
Partners:
- Astronical, Spain
- EN – EF Concept, Serbia
- Sustainable Technologies, Italy

Diagram:
- Dried fish
- Dried vegetable
- Fresh fish
- Fresh vegetable
- Fish production (Tilapia)
- Vegetable production (Salad, Herbs)
- Fish waste (guts, heads, etc.)
- Vegetable waste (inedible parts of plants and fruits)
- Water/water Heat Exchanger
- Water/air Heat Exchanger
- Exhaust mycelium and substrate (humus)
- Biogas
- Anaerobic digester
- Mushroom cultivation (Pleurotus sp.)
- Liquid digestate rich in N as NH4 and P as P04
- Solid digestate rich in lignin and fibre, C/N = 10 to 15
- Residual heat (36 to 45 °C)
- Meal worms, algae, black soldier fly larvae
Season Five

**Team leader:**
Tailor-made arkitekter

**Partners:**
- Darking AB
- Ecorelief AB
- Emulsionen AB
- Container fish farm AB
- Enjay AB
- Kajodlingen AB
- Så ett frö
Urban Ecosystems

FUNCTIONAL AREAS OF THE GREENHOUSE
- How it all comes together -

1. Production unit for leafy greens using vertical towers

2. Composting room, BFS breeding, filtration and machinery.

2. Café serving fruit and vegetables from the greenhouse

4. Self-picking where families can come and pick their own tropical and citrus fruit
Step 3 Interactiv process with three teams

Submission of proposals
6 augusti 2018
Growing together
6. LARGE - PRINCIPLE SOLUTION

6.1 LARGE - SHORT DESCRIPTION
The LARGE-unit is a scaled-up version of the SMALL-unit. The food-producing parts (fish farm and cultivation) are scaled up. The public greenhouse stays the same size and therefore get a less important role for the business case. The footprint is 1000 m².

6.2 LARGE - FACTS

**FLORAL AREA:**
Footprint (on ground) 1000 m²

**INVESTMENT COSTS:**
Construction cost 30 095 000 tkt

**FOOD-PRODUCTION (yearly):**
- Vegetables type A (basil) 22500 kg
- Vegetables type B (tomatoes) 20100 kg
- Fish (Sal) 30 000 kg

**REVENUE (yearly):** 2 310 310 tkt

**BREAK EVEN:** 5 years
Urban Ecosystems, Hemmaodlat
Today: prize ceremony in Malmö 19 September 2018

The teams present their proposals and the winner/s will be awarded.