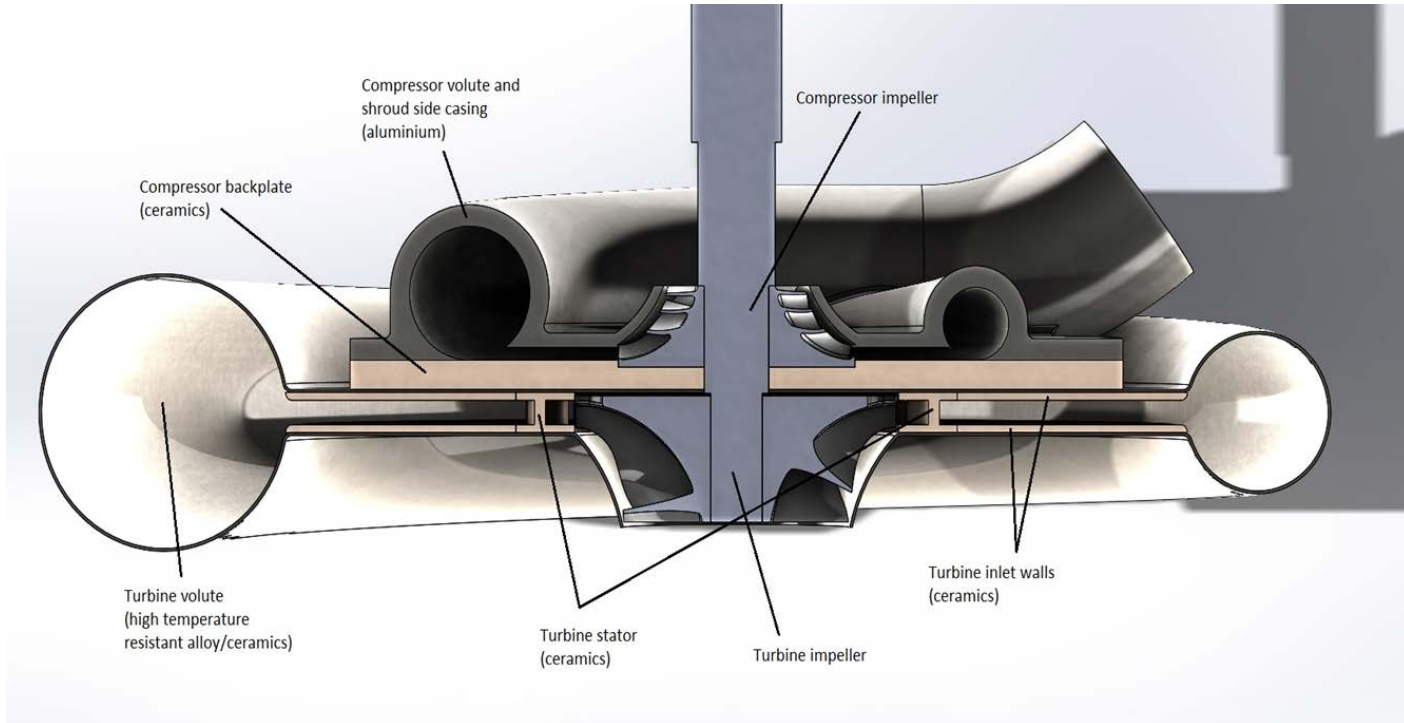


Aurelia Turbines Oy

2-stage, high-efficiency microturbine



World is building HUGE AMOUNTS of new DE/CHP

+ 40 GW

+ 18 GW

+ 20 GW

+ 30 GW

+ 7 GW

+ 7,5 GW

+ 20 GW

+ 4 GW

+ 4 GW

This picture shows some of the targets, set at Government level, for increasing DE/CHP (Distributed Energy / Combined Heat and Power) over next 5 years.

World together now: ~ 50.000 MW / year – and rising.

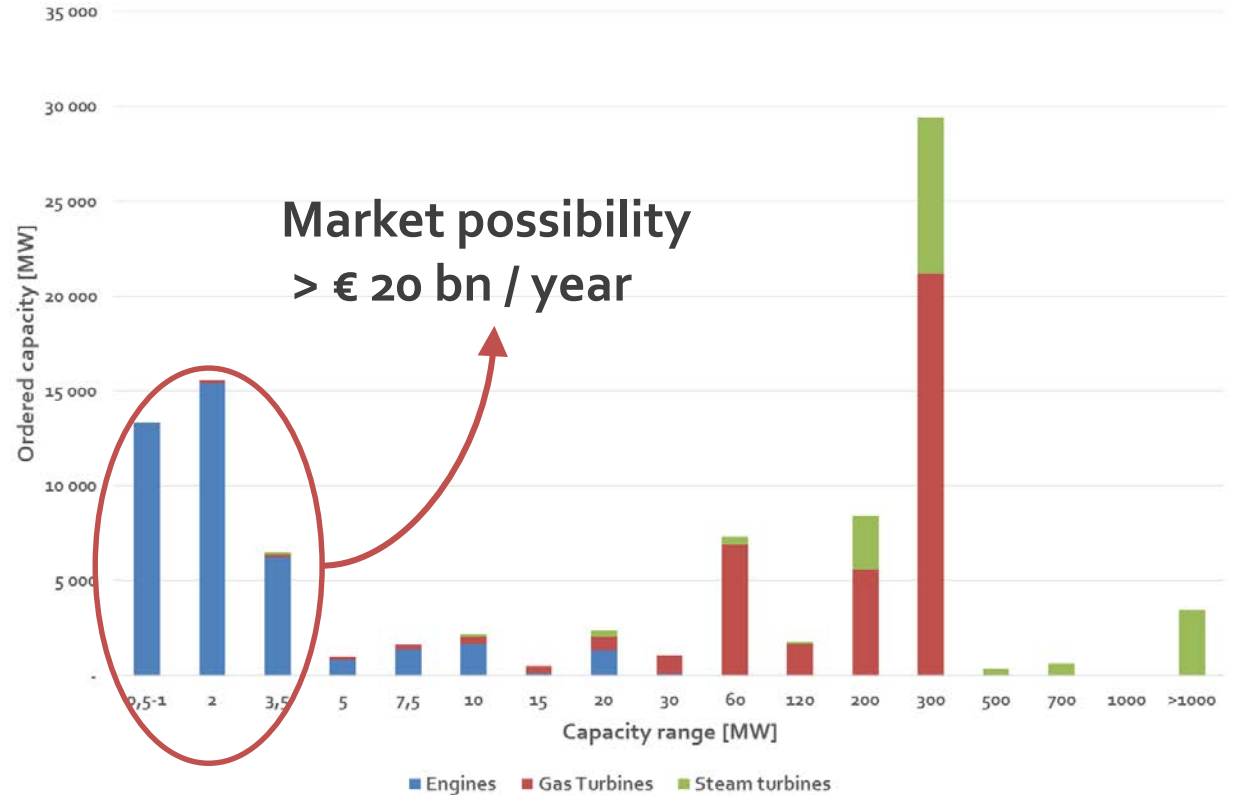
Engines, turbines – Annual worldwide orders, 2013

Total orders

- 95.500 MW
- Bi-folded market
 - Larger units: centralized plants
 - Smaller units: DE and CHP

DE / CHP order development

- +5% from last year < 3,5 MW
- Continuous trend



Existing technology restrictions still hinder the business of DE/CHP – solution could be enhanced microturbine with proven processes.

DE / CHP concerns

Electrical net efficiency

- Gas engines 35% to 44%
- Microturbines < 34%
- Large CCGT's¹ ~ 60%

Partial load operations

- Especially with reciprocating engines causing problems with emissions, efficiency

Emissions

- New, more stringent emission-level cause the efficiencies go down, investments go up

Noise

- Problem with reciprocating engines

Fuel allowance

- Some local fuels can't be utilized (syngas as an example)

New, enhanced microturbine

Multi-stage

- Well-known technology from jet engines since decades
- Enhances efficiency, partial load operations



Recuperation

- Used in furnaces, microturbines and even gas turbines
- Enhances efficiency



Intercooling

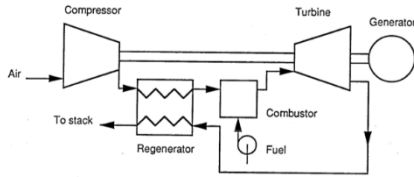
- Used in every modern turbocharged car and in some bigger gas turbines
- Enhances efficiency, partial load operations and tolerance towards ambient conditions



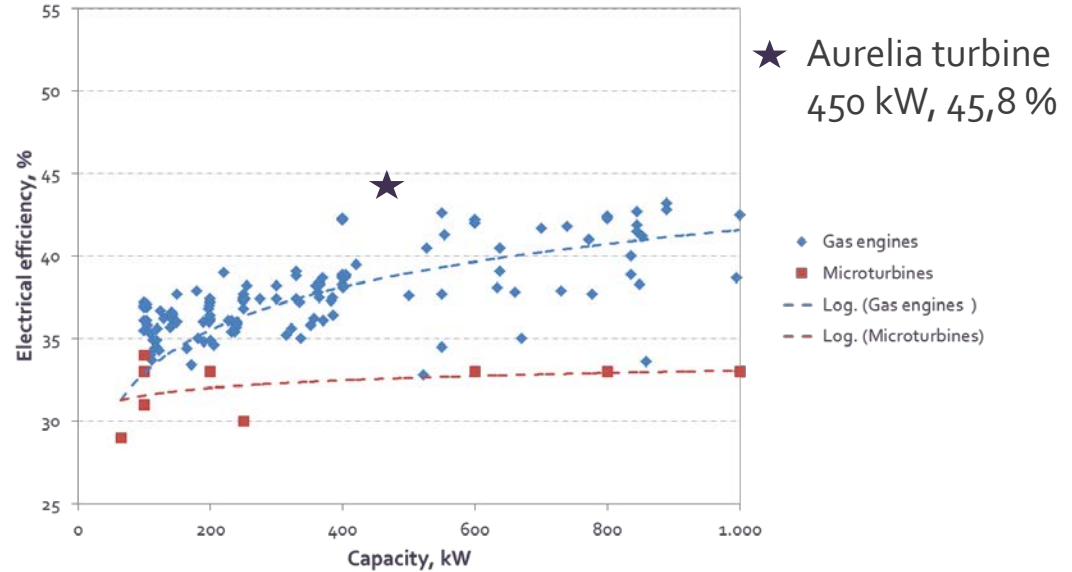
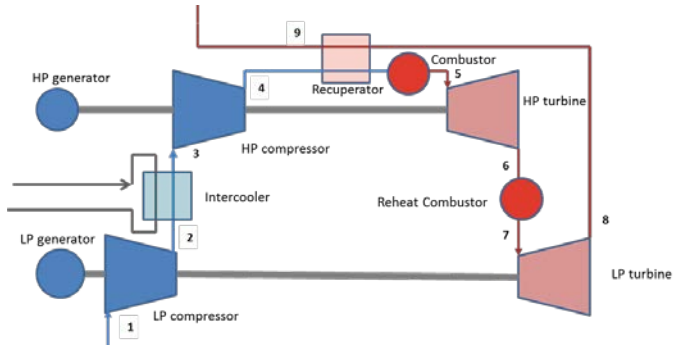
1) CCGT: Combined Cycle Gas Turbine, refers to modern, centralized power plants

Technology is further developed version of the classic microturbine process, providing excellent efficiency towards competition.

Ordinary, 1 stage recuperated microturbine



New, 2-stage microturbine process with two separate shafts and two generators.



The process itself is well-known & demonstrated. New are the developed technologies that enable this process to be used. Aurelia has lots of immaterial rights on these technologies.

The operating costs of small power plants consists mostly about the fuel costs – Aurelia’s core USP is to decrease this cost

Cost structure of power plants below 3MW

Category	% of all costs
Investment costs	12 %
Fuel costs	73 %
Service and maintenance	14 %
Operations	1 %

Fuel and service costs represent the two biggest cost categories to the customers own power generation.

Efficiency is the only factor that affects to the cost of fuel. Higher efficiency means better competitiveness.

Comparison towards gas engine, power only

Item	Gas Engine	Aurelia
Capacity	400 kW	400 kW
Fuel cost /a	266.033 €	244.541 €
Service costs /a	56.000 €	40.000 €
Capex cost /a	55.520 €	61.654 €
Ct / kWh	11,83	10,85

-9,1%

Superior efficiency means benefits in fuel costs – this is our USP. Even bigger benefits come from CHP as turbines per se are very flexible in those. Our typical pay-back time is 30-50% less than with others.

Team



Matti Malkamäki, M.Sc. (Eng.)

- Gas turbine experience since 1996, microturbines since 2002
- Entrepreneur since 2002.
- As CEO listed a company in Frankfurt stock exchange 2010.
- Experienced in DE/CHP, technically and economically oriented.



Jari Backman, Prof.Dr. (Eng.)

- Professor in LUT since 2009
- High speed machinery R&D since 1983
- Played major technical R&D role in LUT industrial projects and spin-offs like Sulzer Pumps Finland, Compair / Quantima, The Switch, Tri-O-Gen, Axcomotors, Visedo...



Trevor Rainbow, MBA

- Director positions; Bilfinger, Capstone, E.On, etc.
- Excellent track record of sales network development in EMEA -region especially on microturbines.



Tony Hynes, BA (Law)

- C- & VP positions; GE, Calnetix, Capstone, Bowman turbines, etc.
- Excellent track record of value incr. deals of 300+ M \$ in last 36 months
- Truly international network



Henry Whittaker, M.Sc., CFA

- Finance director / manager; Cheyne Capital, Mercer Management Consultant, JPMorgan Chase, etc.
- Business & strategic planning
- Excellent network in finance

Financial projections – deliveries planned to start H2 2015

	2014	2015	2016	2017	2018
Revenue	-	2 970	16 754	40 154	70 726
Gross profit	-	282	5 068	15 514	26 925
Gross profit margin	-	9,5%	30,2%	38,6%	38,1%
EBIT	-238	-838	2 272	9 649	18 868
EBIT margin	-	-28,2%	13,6%	24,0%	26,7%
EBT	-242	-871	2 221	9 605	18 847
EBT margin	-	-29,3%	13,3%	23,9%	26,6%
Net profit	-242	-871	2 027	7 684	15 078
Net profit margin	-	-29,3%	12,1%	19,1%	21,3%
Deliveries:		6	36	88	150

Company has signed LOI's for deliveries of 245 turbines during the first 3 operational years. These alone represent sales of >100 Mio €, ~180% of the targets set above.

For manufacturing, we have strategic partners with whom we are able to launch the deliveries.

We are now seeking for finance of our business development. Interested to join?

Major existing investors

cleantechinvest

Ecosummit Silver Sponsor

Tarja Teppo, Partner



Open your mind. LUT.

Lappeenranta **University of Technology**

Through their investment company

Lureco Oy, Managing Director Pertti Miettunen

...and several Finnish business angels,
industrial family offices

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