



Facts about the Pori public swimming hall

Serves the 84000 inhabitants in Pori and also neighboring towns.

Completed in 2011.

8 pools including jacuzzi and cold water pool.

50 meter water slide.

2,7 million liters of water.

Energy saving methods

Exhaust air heat recovery

Heat recovery from used shower water

Heat recovery from filtering system rinsing water

Warm multifunction pool separated with a glass wall

Presence detectors in lighting

Solar systems

250 Pallas 210M PBW polycrystalline panels totalling 52,5kWp

88 Sonnenkraft SK500N-ECO solar thermal collectors

80 m² of Nordic Solar facade collectors developed by Aurubis Finland Ltd



Part of SETechTra staff meeting in Finland

Meeting for the first time

First Transnational Partner meeting and Multiplier were arranged at SAMK campus in Finland. Beautiful late spring days between 18th and 19th of May where selected as there was Skills Finland competition for vocational students at the same time. People were happy to meet each other and it was first trip to abroad for many in years due to restrictions.

Transnational partner meeting

First day began with the meeting that went through with traditional manner. Different intellectual outputs were discussed and how the project moves on. Not surprisingly all the topics raised a lot more conversation than in previous meetings that were online. Being present really lowers the bar for commenting. After the meeting there was visit to Pori public swimming hall to see solar energy systems.



INSIDE THIS ISSUE

- Meeting for the first time **P.1.**
- Facts about the Pori public swimming hall **P.1**
- Interview with Marika Seppälä, Member of Advisory Steering Board **P.2.**
- Multiplier event **P.2.**
- Coming soon **P.3**

Pori public swimming hall visit

Part of the days agenda was to visit Pori public swimming hall to see solar energy systems. Swimming hall was built in 2011 and has 52,5kW of solar photovoltaic panels and 200m² of solar thermal collectors. Photovoltaic system covers 3% of the total electricity consumption as there are millions of litres of pool water pumped through the filtration system every day. Solar thermal systems cover 5% of the consumption and is used to heat up the circulated pool water.

There are also special façade collectors integrated into the green copper wall in front of the swimming hall. This 80m² collector system preheats the new water taken from the grid that replaces the evaporated water in pools.



Photo: Luvata Oy



Interview with Marika Seppälä, member of the Advisory Steering Board

Q1: Tell us a little about yourself and your links with the SETechTra project.

I could describe myself as a fan of both continuous learning and pure nature. Living in Finland, which has a great education system and a beautiful and clean nature, it is understandable that we have a passion for these issues. In the SETechTra project I am the member of the Steering Board, and I'm happy to support the work of the project team together with the other members.

Every day as a dean, I'm amazed how talented and passionate experts we have in our Faculty of Technology. SeTechTra is a good example of what is our mission as a university; SAMK provides experts and developers for the region and promotes internationality and entrepreneurship in Satakunta. Creating learning opportunities together with international partners is vital for us.

Q2: How your university contributes to the Net Zero agenda?

We have committed to the joint action of Finnish Universities of Applied Sciences called "Sustainable, Responsible and Carbon-neutral Universities of Applied Sciences" that is guided by the United Nations' 2030 Agenda for Sustainable Development, and the sustainable development guidelines by the Finnish Ministry of Education and Culture.

We work closely with the property owners and other partners to source climate friendly energy, we are following our carbon footprint yearly, using our campuses as living labs and learning environments to make sure we improve.

Continues on the next page

Multiplier event

Beyond basic PV – solutions to teach solar energy

On the second day we had our multiplier event where many of our project staff presented interesting topics of their work in project intellectual outputs. After the event we visited SAMK roof solar systems. Audience consisted mainly of our own project people but there where also some other interested people online. Main attraction seemed to be the keynote speaker from NAPS solar company. Below are recaps of the main points in the presentations.

Curriculum Design and Pedagogical Approach for Renewable Energy Industry.

Dr David Adebayo (CEng, SFHEA)

The over-arching aim of the presentation was to bring awareness to stakeholders on the importance of collaboration in designing and developing a good curriculum that meets the industry needs in our higher education institutions.

The presentation emphasised that:

Consultation with industry, professional bodies, and other stakeholders is an important aspect of curriculum design (module structure and content development) process.

A better understanding of stakeholders' expectations from the university graduates will help HEIs during the development and design of a new module structure and the contents.

Curriculum should fulfil the requirements set out by the Higher Education Qualifications Framework (HEQF), professional and statutory body (PSRB) and the quality assurance agency (QAA).

A well-planned curriculum where students would acquire employable skills required by industry and provides opportunities for entrepreneurship will attract students.

The attributes and skills required by industry are *categorised into four major areas* in the presentation, which are:

- Self-awareness & lifelong learning
- Employability & professional development
- Global citizenship & engagement
- Academic & research literacy

The process for designing and developing a curriculum of a new module was discussed in detailed during the presentation.

How to optimize usage of PV in Finland

B.Eng Petri Lähde and B.Eng Marko Kukka (SAMK)

Petri Lähde introduced factors that affect the PV-system yield in Finland and what is the typical production of PV systems per kWp. In Finland air is cleaner, summer days are longer and climate is cooler, which boosts the system yield despite of Finland's northern location. Mr. Lähde demonstrated that in detached houses the rate of own consumption (amount of PV production used in the house) is typically quite low and most of the production is sold to the grid. This has not been profitable because of the low price of the sold energy.

Mr. Marko Kukka continued with system design and demonstrated how one can design and optimize the PV system in a way, where the production and household consumption will meet each other better in hourly basis. Mr. Kukka also addressed conventional PV battery systems and virtual battery systems offered by energy companies. Conclusion was, that the price of conventional battery system with the installation in detached houses usually doubles or triples the system total cost and

Q3: What are essential skills for securing graduate employment in the solar energy sectors?

This is a really good question, which I have been considering a lot lately. Of course, the graduates need to know the technology and have an attitude of continuous learning; keeping in track with the upcoming issues in the field. But equally important is to understand customer needs, to adapt to versatile situations, to design viable solutions based on good analysis and to communicate it well to the customer. And to deliver the projects in timely manner within the budget, working together with other disciplines. This is something we educators really need to consider carefully; how do we guide the students through their studies to ensure they have these skills and capabilities to be confident enough to enter the working life to learn more. It is rewarding to deeply understand how the theory works in practice and to be an active member of volatile, uncertain, complex and ambiguous world, but the way there requires guidance and support from us working at higher education institutes.



Marika Seppälä, member of the Advisory Steering Board

Coming soon:

Summer holidays are approaching. Have a great and relaxing summer! Transnational Project Meetings (TPM) and Multiplier Events (ME), November in Greece.

therefore, is not cost efficient. With virtual battery systems the pricing is not always transparent, and contracts are short, typically only one year which makes it harder to estimate total savings in the long run. In the future PV-systems should be seen as integral part of a building instead of extra addition. This will promote the use of PV in all sectors.

KEYNOTE: 40 years of solar power projects – what have we learned

Markus Andersén, Sales Director, Naps Solar Systems Oy

NAPS is 40-year-old Finnish solar energy company that has experience in various installations. Domestic and worldwide installations consist of regular household and industrial systems as well as commercial buildings with traditional and façade integrated systems.

Main points of the presentation were that solar photovoltaics is proven technology and pilot projects are no longer needed. Simple basic solutions are best choice for most systems, complex designs have high risk for system failures. You should select experienced installer to avoid basic mistakes and make sure that all the parts will last at least their designed lifetime. Even though lower inclination causes small losses in solar yield, it is often more feasible to construct and needs less materials.

Demand in systems has recently increased a lot and supply has struggled, this has led to some increase in prices.

A short perspective on Smart Energy Research, CPD and Outreach

Prof Michael Short of Teesside University

Prof Michael Short of Teesside University gave a talk at the SETechTra skills multiplier event at SAMK University in Pori, Finland on the topic “A short perspective on Smart Energy Research, CPD and Outreach”. The talk first outlined the research activities in the department of Engineering at Teesside, with a focus on renewable energies and their integration into the electricity grid. The talk then moved to consider related outreach and CPD activities, and how collaborative research projects have contributed to related work in these areas.

Three specific examples were highlighted, including (i) a research consultancy and student placement with a local company - which resulted in a new product for offshore wind regulation and contributed to a new renewable skills academy, (ii) collaborative work with large industrial partners and SMEs on EU projects - resulting in a new degree apprenticeship and smart energy laboratory at the University, plus a short CPD course on energy efficiency assessment for SMEs, and (iii) the SETechTra project on curriculum development for renewable energies, Solar PV upskilling and schools outreach.



Introduction to Entrepreneurship in Solar Energy

Charmant Ossian, CEO

Charmant Ossian, CEO of consultant firm RECK LTD gave a thorough presentation about the entrepreneurship, its main characteristics and how to become successful.

Some common myths were discussed like you are born to be entrepreneur or they are motivated primarily by money or that they love spotlight. These all turn out to be wrong. Different types of start-ups were presented as well as some barriers that you might face when starting up.