Study of energy recycling and storage options and solutions at Alholmen Industrial Park

The study was conducted as part of the project
Alholmen Circular Economy Platform

Final report 22.12.2025 by Sweco

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JAKOBSTADSREGIONEN
AIP
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Most applicable energy recycling solutions relate to renewable electricity, waste heat potential requires long-term vision

Current state: Material circularity is already on good level, yet there are substantial amounts of waste heat generation and high potential to further add renewable energy at AIP

Key findings: Lack of heat demand is the major bottleneck hindering the waste heat recycling and significant amounts of new heat consumption would be required. However, synergies and interest were found related to especially improvement of resilience via electricity-related solutions

Energy system at AIP is dominated by biggest producers and consumers AK and UPM. AK produces steam for UPM, and district heating and electricity to grids operated by Herrfors. Energy for the rest of the companies within the forest integrate is supplied via UPM, **resulting in relative complexity to make changes in energy recycling.**

The biggest potential for energy recycling on MW-wise is assigned to waste heat which is generated in substantial amounts in various point sources – yet the utilization is hindered by lack of heat demand. Utilization of e.g., tens of megawatts of waste heat in e.g., waste waters would require significant amounts of new heat consumption.

Companies within AIP operate in very different businesses, resulting in challenges to find synergies and co-operation models. Financing, unclarity of value creation logic and revenues, uneven benefits, and zoning and permitting were also identified as bottlenecks for improved energy recycling.

Solutions improving resilience and self-sufficiency in electricity gained most interest

Short-term: Increasing the share of renewable energy by e.g., solar panels, renewable fuels, and electrification.

Mid-term: Improving self-sufficiency and resilience by introducing Battery Energy Storage Systems.

Long-term: Microgrid was seen as interesting solution to further improve resilience, self-sufficiency, and business environment in long-term.

Solving bottlenecks requires co-operation and long-term vision

1. **Heat consumption**
   Long-term planning should attract e.g., investors and operations creating new heat consumption, in order to improve waste heat utilization.
2. **Financing**
   Financing options and co-operation models should be further investigated to improve profitabilities of technologies improving energy efficiency.
3. **Co-operation**
   Co-operation should be a continuous process to actively find synergies and development opportunities, involving also e.g., potential investors and universities.

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The main objective was to develop a roadmap for implementing energy recycling, waste heat recovery and storage solutions in AIP

Background:

Pietarsaari Region Development Company Concordia Ltd, together with Alholmen Industrial park seeked to carry out a study as part of the ACEP project funded from the European Union Just Transition Fund, JTF. This study supported the work package on Sustainable Regional Renewable Energy for Alholmen Industrial Park.

- The aim of this project was to map out opportunities and solutions for increasing the use of renewable energy within the Alholmen Industrial Park area*, as well as improving energy efficiency and, consequently, resource efficiency in the region.
- These actions aimed to find synergies between local actors and the regional energy provider, while also enhancing the area's attractiveness and self-sufficiency by exploring innovative methods for renewable energy production and utilization.
- Additionally, the project seeked to find out what types of new actors energy development might attract to the region and how AIP could become a national forerunner in this field.

The project objectives:

Identify opportunities and solutions for the use of renewable energy in AIP area.

Benchmark successful energy recycling and storage systems in comparable industrial ecosystems.

Develop a roadmap for implementing energy recycling, waste heat recovery, and storage technologies in AIP area.

* The study included the following AIP actors: Nautor Swan, Nordpipe Composite Engineering, UPM Pietarsaari & UPM Alholma Sawmill, Baltic Yachts, Port of Pietarsaari, Euroports Pietarsaari, Alholmens Kraft, Billerud Finland, Walki, OSTP Finland

Content

The work was carried out in four phases, progressing from current solutions, benchmark analysis to roadmap workshop and final report

Phase 1. Scoping of existing energy solutions and improvement needs

Phase activities:

- **Utilizing background material** from prior Sweco and AIP assignments (ie. material flow analysis conducted in 2023).
- **10 x scoping interviews with AIP stakeholders** to map out existing energy solutions, needs and synergies: review of current energy and heat solutions:
- Synthesis of the phase 1 results and a review meeting with the steering group.

Methods:

- 1,5 h Kick off Teams-meeting with client and AIP companies.
- Interviews with AIP stakeholders.
- Synthesis meeting with AIP companies and client (Teams, 1 h).

Outcome: Analysis of current technical solutions and most pressing short- and long-term improvement needs and potential synergies.

Phase 2. Benchmark analysis of potential options and solutions

Phase activities:

- Conducting a **benchmark analysis of existing options** and solutions for heat and energy recycling and waste heat recovery and energy storage from comparable industrial ecosystems.
- **Listing of most potential companies and research institutions** offering innovative solutions in both areas of Waste Heat Recovery and Energy Storage.
- **If needed, a benchmark interview** with Eco3 Circular Business Park representative to identify potential options and best examples.
- **Brief qualitative expert analysis**, pointing out most suitable solutionS within the AIP area to be further discussed with AIP companies during Phase 3.
- Synthesis of the phase 2 results and presenting results to the steering group (Teams, 1h).

Methods:

- Desk top analysis.
- Sparring sessions with Sweco expert panel to map out leading solutions.

Outcome: Listing of options and solutions from potential companies and research institutions in heat and energy recycling and waste heat recovery.

Phase 3. Co-developing of roadmap with Concordia and AIP stakeholders

Phase activities:

- Designing the first **draft roadmap** as expert work of the consultant including prioritized solutions.
- Designing and facilitating a co-development workshop for AIP companies to validate the draft and to develop an implementation plan for 2024-2030.
- Sending out workshop pre-assignment to orient the participants to the draft of the roadmap.

Methods:

- Workshop facilitation and support for co-development process (hybrid, 2 hours, 1 consultant present at AIP location): round table discussion and group work.

Outcome: Finalized roadmap.

Phase 4. Synthesizing and presenting results

Phase activities:

- Synthesizing the workshop outputs and **finalization of the roadmap and implementation plan, finalizing the qualitative assessment of feasibility of the proposed solution(s)**.
- Summarizing the key results of phases 1-3 in a **final report**, in a PPT and PDF format. Providing key recommendations how to e.g. finance the next phase of the development of AIP's energy roadmap.
- **Presenting the final results** to the AIP companies and Pietarsaari Concordia.

Methods:

- Generating a concise, visual synthesis report of the results (ppt, approx. 10-15 slides+ appendices, in english).
- A presentation event for AIP companies and the client (Teams, 1 h).

Outcome: Final report, presentation of results and recommendations for next steps.

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Stakeholder interviews were used to map out the current state of the energy system

Interviews conducted: 9

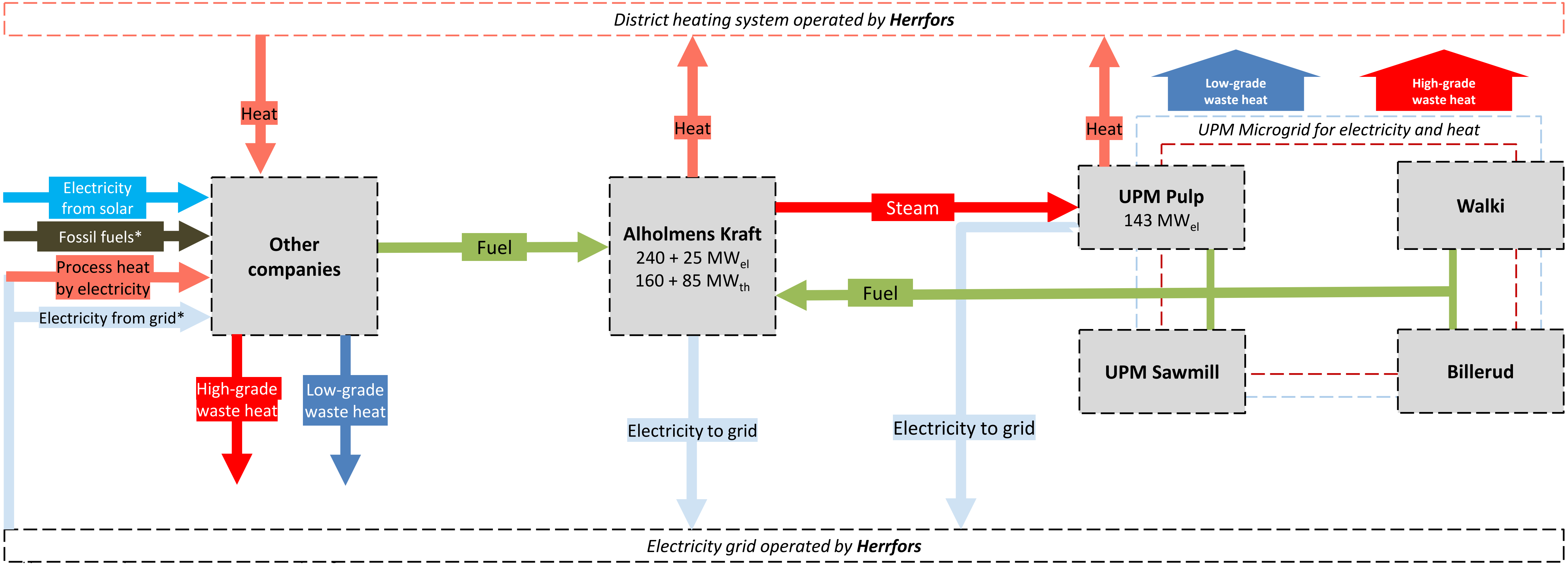
Format: 45 min scoping interviews

Main topics covered:

- Current energy and heat solutions
- Waste heat sources and utilization
- Short- and long-term improvement needs
- Barriers and collaboration opportunities
- Storage and circulation use cases

Company	Representative
UPM Pietarsaari	Tomi Heikkinen
UPM Alholma Sawmill	Mika Åby
Nautor Swan	Benny Brännbacka
Baltic Yachts	Pamela Honga
Billerud Finland	Marjo Santanen
Port of Pietarsaari	Johanna Heinoja
Walki	Tiina Mäntypuro
OSTP Finland	Jyrki Sironen
Nordpipe Composite Engineering (NCE)	Markus Niemi
Alholmens Kraft	Björn Åkerlund

Energy in the area is largely centralized around Alholmens Kraft, the forest industry ecosystem, and electricity and district heating networks operated by Herrfors



Centralized, biomass-based energy system with significant untapped waste heat potential

Overview of current energy production, consumption, and sources

Production

- **The biggest energy producers within AIP are Alholmens Kraft and UPM Pulpmill which are dominating the energy system together with Herrfors that is operating both district heating and electricity grids.**
- Energy in forest industry integrate is supplied via UPM which sells the heat and electricity to Billerud, Walki, and UPM Sawmill. As a result, actions for energy efficiency improvements are largely dependent on UPM.
- Substantial amounts of waste heat are generated in several point sources – most significant ones include AK's flue gases, waste heat from UPM Sawmill's drying system, and UPM Pulpmill's waste waters.
- Some companies have invested in solar panels and thus, energy is also produced by solar power.

Consumption

- **There are several energy-intensive processes that require high-temperature heat or steam or amounts of electricity**. Electricity-intensive processes include hardening processes of e.g., Baltic Yachts, whereas forest industry requires high-temperature heat and steam.
- Energy is also largely consumed in transport and for example ventilation.
- Most companies are connected to district heating.
- Adjusting the electricity consumption flexibly based on electricity prices is not feasible for most processes, indicating potential benefits from e.g., BESS.

Energy sources

- **Both heat and power consumed within AIP are mostly biobased**, as biomass is the primary fuel for AK. Several companies are delivering their biobased waste streams to AK for combustion. UPM is also using biobased fuels in its own processes.
- Fossil fuels are used as backup power and in few processes, and especially in transport. AIP has conducted a plan for internal transport electrification.
- Solar power is produced in small amounts.
- Waste heat is currently not widely utilized even though some heat recovery actions have been completed.

Integrated energy solutions enable major efficiency and decarbonization benefits

Solutions for different energy streams

	Solutions	Benefits	Use cases	Potential synergies

Waste heat	• Heat pumps
	• Other LTO and heat recycling solutions
	• Improved insulation to reduce generation of waste heat
		• Improved energy-efficiency
		• Utility cost reductions
		• Emission reductions
		• Improved resilience and predictability
			• Pre-heating of drying systems
			  • UPM Sawmill, Billerud
			• Pre-heating of furnaces:
			  • Baltic Yacths, NCE
			• Drying fuel prior combustion:
			  • Alholmens Kraft
			• District heating
			• Heating of buildings and water
				In general, waste heat is most efficient to utilize in own processes – such as pre-heating of processes and heating of buildings and tap water – to avoid thermal losses
				• District heating: AK and all companies connected to district heating network
				• Pre-heating of drying systems and processes: Walki, Billerud and UPM Pulp & Sawmill
				• Drying fuel prior combustion: UPM Sawmill & AK

Electricity	• Renewable electricity: solar panels, RE contracts, shoreside electricity for ships
	• Improved monitoring and automation
	• BESS: Investment or BESS as service
	• Microgrid as service
		• Reduction/optimization of electricity consumption and costs
		• Improvement of self-sufficiency
		• Reduction of backup power demand
		• Balancing of the transmission grid
		• Access to reserve markets
			• Monitoring of heating systems and ventilation
			  • OSTP
			• Monitoring of processes e.g., temperatures, flue gases, moisture content
			• Charging BESS with solar panels during hours with low electricity price and powering electricity-intensive processes at times of high electricity prices
			  • Benefits both DSO and companies
			• Joint investments: BESS, EV charging, solar panels
				• Renewable electricity:
				  • AK & OSTP, Pietarsaaren satama and Euroports
				• Herrfors and companies investing in solar panels and BESS
				• Potential joint investments in BESS or BESS as service:
				  • Nautor Swan & NCE
				  • Euroports, Baltic Yacths ja Pietarsaaren satama
				  • Benchmark: Logistics Center Hakkila: BESS, solar farm and microgird as service provided by Helen

Fuels	• Electrification: processes and transport • Fuel switch to renewable alternatives • Shoreside electricity and renewable fuels for ships • Traffic control for ships	• Reduction of electricity consumption and costs • Improvement of self-sufficiency • Reduction of backup power demand	• Monitoring of heating systems • Monitoring of processes e.g., temperatures, flue gases, moisture content • Covering backup power with renewables • Electrification and renewable energy in harbor by RE contracts and shoreside electricity: Vuosaaren satama	• Euroports and Pietarsaaren satama

Content

The purpose of the benchmark analysis was to short list energy solutions suited to the AIP context

The benchmark analysis was conducted to identify, assess, and shortlist proven and emerging heat and energy solutions that are technically feasible, cost-effective, and climate-relevant for the AIP context, with a primary focus on the Finnish industrial ecosystem.

Identify	Assess	Select
Finnish benchmarks Best practices Solution providers	Technical readiness Suitability	Priority solutions Best fit for AIP

Waste heat recovery delivers proven efficiency gains through process integration and district heating

Benchmark analysis for waste heat utilization

- **District heating**
- **Process heat and drying systems**
- **Raw water and buildings**

Case 1: UPM Timber, Korkeakoski[1]

At UPM's Korkeakoski sawmill, the utilization of waste heat from the timber drying kiln as a heat source for the mill began in 2023. Waste heat at 50–60 °C is recovered with a 1 MW heat pump, which upgrades it into heat exceeding 100 °C, meeting the high temperature requirements of the sawmill industry. The heat pump plant reduces the use of wood chips in heat production, improves energy and cost efficiency, and increases drying capacity during periods of severe frost.

Benefits: Cost savings, reduction in emissions and fuel consumption, and improved energy-efficiency

Case 2: Boliden Kokkola & Kokkolan Energia

Boliden has carried out several measures at its zinc plant in Kokkola that have significantly improved energy efficiency, one of which is utilizing waste heat in Kokkola Energy's district heating network – more than 40% of Kokkola's district heat is produced from waste heat generated in Boliden's processes, and during the summer the heat demand is practically covered entirely. In addition, the plant has improved energy efficiency by, among other things, optimizing the amounts of chemicals used in the processes, optimizing ventilation, and significantly reducing the process's electricity consumption using frequency converters.

Benefits: Cost savings, reduction in emissions and fuel consumption, and improved energy-efficiency

Case 3: Stora Enso & Imatran Lämpö[3]

Stora Enso and Imatran Lämpö launched a project in 2023 to recover waste heat from the wastewater of the Kaukopää mill and utilize it for district heating. District heat production based on wastewater waste heat began in 2025, diversifying Imatra's district heating production, reducing emissions and the mill's environmental impact, as well as lowering district heating costs and ensuring a more stable district heating price. The waste heat recovered from the wastewater replaces more than half of Imatran Lämpö's wood procurement. The project received three million euros in RRF investment support from the Ministry of Economic Affairs and Employment.

Benefits: Cost savings, reduction in emissions and fuel consumption, and improved energy-efficiency

1) https://calefa.fi/jo-vuosi-energiaa-sahatavarakuivaamon-hukkalammosta/
2) https://energiatehokkuussopimukset2017-2025.fi/boliden-kokkola-oy-suuressa-sinkkitehtaassa-riittaa-potentiaalia-energiansaastossa/
3) https://imatranlampo.fi/hukkalampohanke-loppusuoralla-kaukolammon-tuotanto-on-alkanut/

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Electrification, storage, and microgrids enable rapid emission cuts and system flexibility

Benchmark analysis for electricity-related solutions

Categories: Renewable energy · BESS · Electrification · Microgrid

Case 1: Vuosaaren satama

Port of Helsinki Ltd achieved its carbon neutrality target in 2025 by implementing several measures to reduce energy consumption. The port's emissions decreased by more than 60% between 2015 and 2024 through the following energy solutions:

- Transition to district heating produced entirely with renewable energy
- Fossil-free electricity verified with guarantees of origin
- Electrification of the port's vehicle fleet
- Switching fuels to biofuels
- Providing shore-side electricity for vessels
- Optimizing maritime traffic

Benefits: Emission and cost reductions, improved energy efficiency and increased share of renewable energy

Case 2: Sipoo Logistics Center, S-Ryhmä[2]

In its logistics centres in Sipoo, the S-Ryhmä uses 1 MW energy storage systems supplied by Merus Power to store surplus production from solar power systems and to participate in the energy and frequency regulation markets. Thanks to the energy storage systems, the logistics centre can efficiently utilise its own renewable energy production and balance fluctuations in electricity prices. In addition, the storage systems support the operation of the electricity grid by correcting frequency variations.

Benefits: Improved energy efficiency and energy cost savings, revenues in reserve market, grid balancing and increased share of renewable energy

Case 3: Kilpilahden teollisuusalue[3]

Aurora Infrastructure operates a microgrid in the Kilpilahti industrial area, where the microgrid supports electricity supply security and the transition to fossil-free production by using only electricity generated from hydro and wind power. It is an industrial transmission network that falls outside regulatory oversight. Aurora also provides a similar system in Tornio at Outokumpu's industrial site.

Benefits: Improved reliability and resilience of the electricity system and increased share of renewable electricity

1) https://navigatormagazine.fi/uutiset/satamat-ja-logistiikka/helsingin-satama-saavutti-omat-ilmastotavoitteensa-tyo-jatkuu/
2) https://news.cision.com/fi/merus-power-oyj/r/s-ryhma-rakennuttaa-kaksi-sahkovarastoa-sipoon-logistiikkakeskuksiin,c3361297
3) https://www.kilpilahti.fi/yritys/aurora-kilpilahti-oy/

Benchmarks were identified across the AIP area

UPM Sawmill
Waste heat utilization in sawmill drying system to reduce energy consumption

Benchmark: Stora Enso, Varkaus: Waste heat

Nautor Swan, Baltic Yacths and OSTP
Improvments needed in propane and electricity consumption:
- Utilization of waste heat for pre-heating of furnaces
- Improvements in insulation to reduce thermal losses, and ventilation

Joint investment of BESS as service:
- **Baltic Yacths, Euroports and Pietarsaaren satama**
- **NCE and Nautor Swan**

Companies could benefit from joint investments in BESS, EV Charging, solar panels and microgrid – or they can be delivered as service.

Benchmark: Logistics Center Sipoo

Alholmens Kraft and UPM/Billerud
Drying of biomass prior to combustion by waste heat and utilization of waste heat in district heating to reduce fuel consumption and improve efficiency
Benchmark: Metsä Group Pulpmill and Rauman Energia

AK and all companies producing waste heat
Utilization of waste heat in district heating network

Billerud and Walki
Waste heat utilization in raw water heating to reduce e.g., chemicals consumption

Benchmark: UPM Communication Papers Rauma & Rauman Biovoima: significant savings in energy and chemicals

Euroports and Pietarsaaren satama
Electrification of harbor operations (EV's) and heating with RE, shoreside electricity option for ships and improved traffic control to reduce emissions
- Euroports: 12% of electricity demand covered with RE → high improvement potential

Benchmark: Vuosaaren satama: Carbon neutrality in 2025

Content

Although measures to improve energy efficiency may face certain constraints – it is worth investing in the development of the area

Heat demand

- The potential for utilizing waste heat is limited by the heating demand in the Pietarsaari area: more waste heat is generated than there is demand for, particularly in the district heating network at present.
- There would need to be a significant increase in demand in the area in order for all suitable waste heat to be utilized in a technically and economically viable manner.

Co-operation and benefits

- Not all opportunities for cooperation may have been identified or recognized, or their benefits may be unclear – it is important to establish a common vision and clear objectives for improving energy efficiency.
- The achievable benefits may not be perceived as relevant to companies.
- Cooperation agreements do not offer mutual benefits, or existing agreements prevent effective progress.

Financing

- The ownership structures and/or business models of companies may limit investment opportunities, for example in cases of long payback periods.
- The economic benefits of investments are unclear or insignificant.
- Companies may not have explored the financing options and/or support mechanisms available for investments that improve energy efficiency.

Permitting

- Existing lease agreements and/or land ownership structures may restrict investment or reduce its attractiveness.
- Restrictions and delays related to zoning and permitting.

Major bottlenecks are related to waste heat, limited regional demand hinders the profitability and possibilities to utilize waste heat fully

One of the key findings of the study was the substantial waste heat potential at AIP. However, identified bottlenecks hinder the realization of the waste heat potential

1. Heat demand

- There are several especially interesting point sources with high volumes of waste heat, including flue gases at AK and waste waters at UPM pulp mill. However, the availability of waste heat exceeds the demand – for example, the waste heat potential of UPM's wastewater alone is up to 40 MW whereas the heating load in district heating network is limited to 10 – 70 MW.
- Significant additional heat consumption should be introduced in the area and district heating network extended to utilize the waste heat potential even partially

2. Financing and value creation logic

- Utilization of waste heat has been studied earlier especially within the forest industry integrate, yet the benefits and value creation logic has remained unclear. Companies may have fixed (short) payback time requirements that are not met with the investigated technical solutions.
- Willingness to proceed with investments related to waste heat utilization can also be limited by the structure of the ownership – the investment would create uneven benefits between the company owners, resulting in complexity of e.g., financing

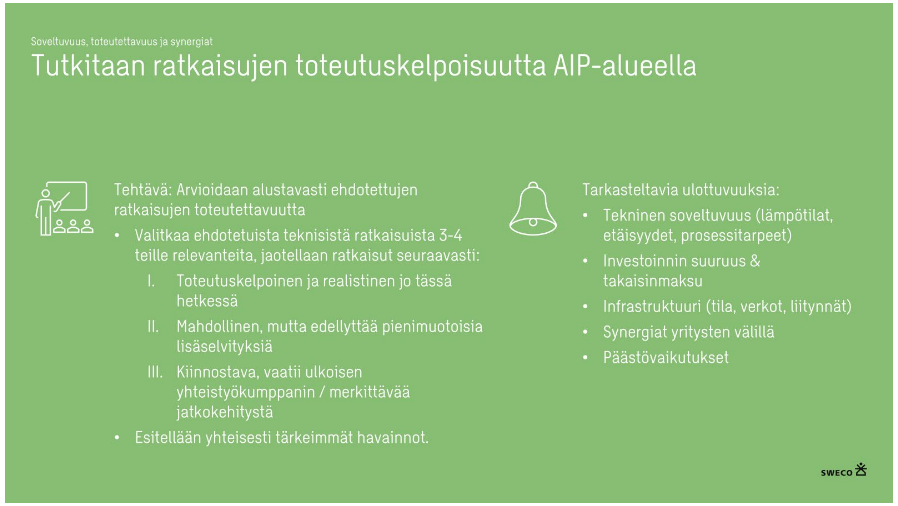
3. Co-operation and lack of synergies

- In order to efficiently utilize waste heat, projects typically require willingness and capabilities to co-operate with several stakeholders. This can be seen as additional workload with unclear benefits within the companies.
- Companies at AIP operate in very different businesses, which seems to complicate the establishment of co-operation as synergies may be challenging to find. Companies should be able to e.g., synchronize the waste heat generation and heat consumption or renew their operating models.

Content

In the roadmap workshop, the feasibility of screening solutions in the AIP context were discussed

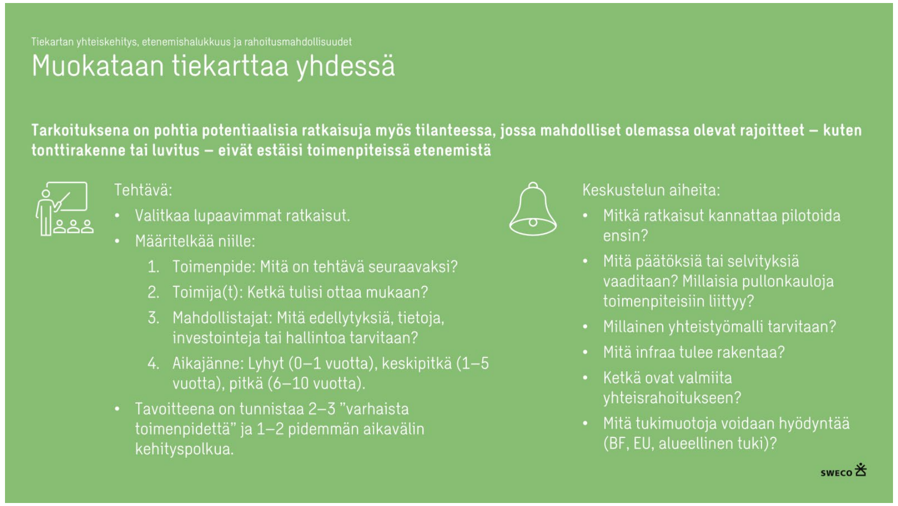
Task 1: Feasibility scan of identified solutions



Participants assessed the preliminary feasibility of 3–4 selected technical solutions for the AIP area. Solutions were classified as:

- Feasible and realistic in the short term
- Potentially feasible with minor additional studies
- Interesting but requiring external partners or significant further development

Task 2: Joint roadmap co-development



Participants jointly refined the draft roadmap by prioritizing the most promising solutions, assuming that current constraints would not limit progress. For selected solutions, participants defined:

- Next actions
- Key actors and partners
- Required enablers (data, investments, governance)
- Indicative timeframe (short, medium, long term)

The task aimed to identify 2–3 near-term actions and 1–2 longer-term development pathways.

Short-term actions companies are mostly to complete on their own – longer term solutions are more CAPEX-intensive and require co-operation and utilization of synergies

Priority

Short-term actions (0-1 years)

- Process monitoring and optimization
- Switching from fossil fuels to renewable alternatives including transport fuels, gas, and peat
- Renewable electricity contracts
- Internal transport: electrification of the vehicle fleet

Mid-term actions to be initiated within 1 to 5 years

- BESS
- Shore power for ships
- External transport: electrification of vehicle fleets, e.g. at charging points for heavy-duty vehicles
- Additional solar power

Long-term actions (6-10 years)

- Renewable marine fuels
- Electrification of process heat (AK?)
- Heat storage, e.g., district heating accumulator
- Microgrid
- Heat pumps and waste heat recovery

Resilience and renewable electricity were seen as especially interesting areas of improvement in the workshop

Most interesting options to improve energy efficiency at Alholmen Industrial Park were identified based on stakeholder interviews and the workshop

Microgrid

- Microgrid was seen as brave and out of the box kind of solution to improve resilience and risk tolerance in the long-term – especially in the current geopolitical situation
- Microgrid was introduced via industrial micro grid benchmarks at Kilpilahti and Outokumpu (Tornio) Industrial Parks. Alholmen Industrial Park possess particularly interesting conditions to introduce a microgrid as there is already one operated by UPM forest industry integrate
- Further feasibility and profitability studies should be conducted in co-operation with Herrfors

BESS

- Battery Energy Storage Systems were seen as interesting options to also improve resilience and self-sufficiency in energy supply. BESS can be either introduced as an investment or delivered as a service.
- There are process that cannot be adjusted flexibly to electricity prices which supports the justification for BESS
- By introducing BESS, companies would also get access to reserve markets and resulting revenues

Renewables

- Renewables – both fuels and e.g., solar panels – were seen as highly potential solution to improve self-sufficiency and to reduce emissions in short-term with relatively low threshold.
- Solar panels are especially favorable due to several yet unemployed rooftops in which the panels can be installed – profitability can potentially be further improved if combined with BESS
- Fuel switch was also already part of the companies short to mid-term strategy

AIP's next phase hinges on cooperation, new demand, and resilient energy solutions

Proposed actions

1. Increase cooperation with Herrfors, which operates electricity and district heating networks, to prepare for the utilization of waste heat.
2. Identify obstacles created by zoning and permitting that hinder the development of the area's energy system.
3. Identify financing opportunities for investments, e.g. EU support.
4. Investigate opportunities to attract new business and heat consumption to the area, such as greenhouses, fish farming, logistics centers/warehouses, ball game halls, and the chemical industry.
5. Investigate the conditions for improving the resilience of the area through microgrids and electricity storage, as well as the benefits and opportunities they offer.

Several funding instruments could support piloting, structuring, and scaling priority energy solutions identified in the roadmap

European Energy Communities Facility

What it supports

- Grants up to €45,000 for early-stage energy transition initiatives
- Covers groundwork, such as feasibility studies, governance models, and business plan preparation for energy communities

Who can apply

- Emerging or existing energy communities
- Registered legal entity required

Timing

- Opening in spring 2026

Fit with AIP roadmap

- Well suited for early coordination and structuring of joint energy solutions
- Could support exploring shared energy models, governance, and business cases for waste heat use, local energy sharing, or storage
- Relevant if AIP stakeholders aim to formalize cooperation as an energy community or similar joint entity

Business Finland – Energy Aid

What it supports

- Investments in energy efficiency, new energy technologies, and power system flexibility
- Supports both technology deployment and commercialization

Who can apply

- Companies and organizations investing in energy-saving or efficient energy solutions

Timing

- Continuous call
- Projects must not be started before funding decision

Fit with AIP roadmap

- Strong fit for concrete pilots and investments, such as:
    - Heat pumps and waste heat recovery
    - Battery energy storage systems (BESS)
    - Process electrification
- Particularly suitable for company-led or joint investments emerging from Phase 3

LIFE Clean Energy Transition

What it supports

- EU program (2021–2027, ~€1 billion) focusing on:
    - Enabling frameworks and governance
    - Scaling clean energy solutions
    - New business models and market uptake
    - Mobilizing private investment

Who can apply

- Varies by call (often consortia of companies, cities, research bodies)

Timing

- Multiple calls with varying deadlines

Fit with AIP roadmap

- Relevant for larger-scale or longer-term development, especially:
    - Replicating solutions to AIP from other industrial areas
    - Developing investment models and financing structures
- Likely more suitable as a next step after pilots, rather than immediate implementation

A KRAFT

Baltic Yachts

BILLERUD

EUROPORTS

NCE
nordpipe composite engineering
–part of INSTALCO

NAUTOR SWAN

UPM

OSTP

PORT OF
JAKOBSTAD PIETARSAARI

walki


AIP
ALHOLMEN INDUSTRIAL PARK