



**BUSINESS
FINLAND**



Leverage from
the EU
2014-2020

The Prospects of Renewable Energy Investments in Jordan

Innotek Oy – Energo® Smart Water® Solution
Antti Paukkala (Development Director)



1. THE BEGINNING OF INNOTEK OY

- Since 1995
- Founder Esa Pönkänen built a boat, and needed to install a toilet
- Standard toilets consumed a lot of water
- Esa had an idea in the sauna
- If he lifted an upside-turned mug out of the sauna's water bucket, it carried the water within it
- The idea for a less water consuming Flush Guard system was born
- On that idea he started a business which grew to be fore-runner in water savings and developing comprehensive water conservation solutions for both private and public sector

2. FRESH WATER IS LIMITED

- 70% of the globe is covered with water, but only 1% of water is fresh, and 25% of that is contaminated
- Gathering, pumping and purifying raw water is expensive and environmentally loading
- Heating the water for use eats up a lot of energy
- Major part of sewage is treated with acids, sulfates and other harmful substances
- Overconsumption is finally getting recognised futile world wide



3. THE ENERGO SOLUTION



- Energo Smart Water Solution is a rewarded cleantech program for real estate owners and cooperatives in both public and private sector. Energo and Smart Water are registered trademarks.
- The solution started with servicing and modernizing the existing water fixtures. This is a cost-affecient way, and we still service around 20 000 apartments in Finland annually, with average savings of:
 - 70% per water fixture
 - 25% overall
 - 15% of water heating energy
- Through over 20 years of development and research, and joining the best available manufacturers, we are now fitting the most modern water fittings for hospitals, prisons, schools, hotels, malls etc.

4. THE PRODUCTS

The Smart Water Solution consists of expertise and know-how, and high quality products. Some are innovated and manufactured by Innotek, and some are gathered from around the world and modified in Finland. Here are some examples of our products.

- Condition surveys, consumption analysis, reports and other services such as providing data through monitoring the building
- Long term maintenance programs and follow-ups
- Products for existing water fixtures
 - pressure regulated flow aerators
 - High-end shower heads with constant flow
 - Flush Guard for modernising the toilets into dual flush models
 - Leak elimination with new seals and water couplings
- Products for new construction and design
 - Computer operated water systems with adjustable functions and controllable water flows, temperatures etc
 - Robust mechanical water fixtures for hard use in schools, prisons, sports halls, refugee camps and so on
 - High hygiene products for health care



5. THE PRINCIPALS

- Comfort of the water fixtures must keep or improve
- An investment must pay for itself quickly, and make a good profit for the customer
- We always use the Best Available Techniques (BAT) to reduce harmful environmental impacts
- We commit not only to quick savings, but to a lasting customer relationship and long term financial savings
- We approach the customer by evaluating their needs overall (savings, comfort, maintenance, image, water sufficiency and so on)
- We always research for new ecological materials with a life cycle CO2 emissions near zero, such as natural fibre composites, biocomposite, soapstone composite.

6. FINANCIALS – The Finnish Market

- 1 m³ of cold water costs an average of 4,30 € (including the waste water fee)
- 40% of all the water used is pre-heated from 8'C to 58'C
- Heating the water uses 58,2 kWh of energy per 1 m³ of water
- Cost of heating is 4,66€/m³ (district heating) or up to 6,69€/m³ (direct electricity)

Energio Solution:

- Costs an average of 50-100€ per an apartment
- the profit in five years time is six times the original investment





7. AN EXAMPLE OF THE SOLUTION

An office building in Helsinki, including 79 toilets, 12 showers and 150 hand washing taps, with an annual water consumption of 6900 m³:

- Water flows were reduced from 16 litres per minute to 1,7 l/min for hand washing, and from 28 l/min to 8 l/min for kitchen taps
- The shower system was replaced with an all digital system and the flow rate was reduced from 25 l/min to 10 l/min
- All leaks were tracked and taken care of, and all the toilets serviced
- Price for the operation was just under 10 000 euros, and it reduced consumption by 28%.
- Financial savings were 13500€ per year, and the results are guaranteed to keep for at least five years
- In that time the overall profit for the investment is over 65 000€

8. THE ACCHEIVEMENTS IN FINLAND

20 000 apartments go through the Energo Program annually. Savings achieved in the first year for those:

- 2 500 000 kg-eq in CO2 emmissions
- 840 000 000 litres in water consumption
- 19 555 MWh in heating energy
- 3 600 000 € in water bills
- 1 500 000 € in heating bills

Innotek has been doing this for 21 years, so it's almost impossible to calculate the overall savings, but let's try a very simplified way:

We've serviced approximately 300 000 apartments. Five year savings for those:

- 35 000 000 kg CO2-eq
- 63 000 000 000 litres of water
- 1 466 000 MWh of heating energy

An average car releases 180 g of CO2 per km. It would take almost 2 million km to compensate for Energo savings. That is over 900 times to the moon and back.

Thank You!

Further information:

+358 40 0850 850
post@energo.fi
www.energo.fi/en