



# „ Green and smart growth City of Rakvere in Estonia „

## **Andres Jaadla**

**Mayor of Rakvere 2002-2012**

**Committee of the Regions** – member of the commission of Environment and Climate Change.

**Housing Europe** - Board Member and Chairman of the Estonian Housing Association, Estonia

**SA Virumaa Competence Center of Excellence (Estonian Smart city/house  
Competence Center, in Rakvere)** as Director of development and education.

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# ANDRES JAADLA



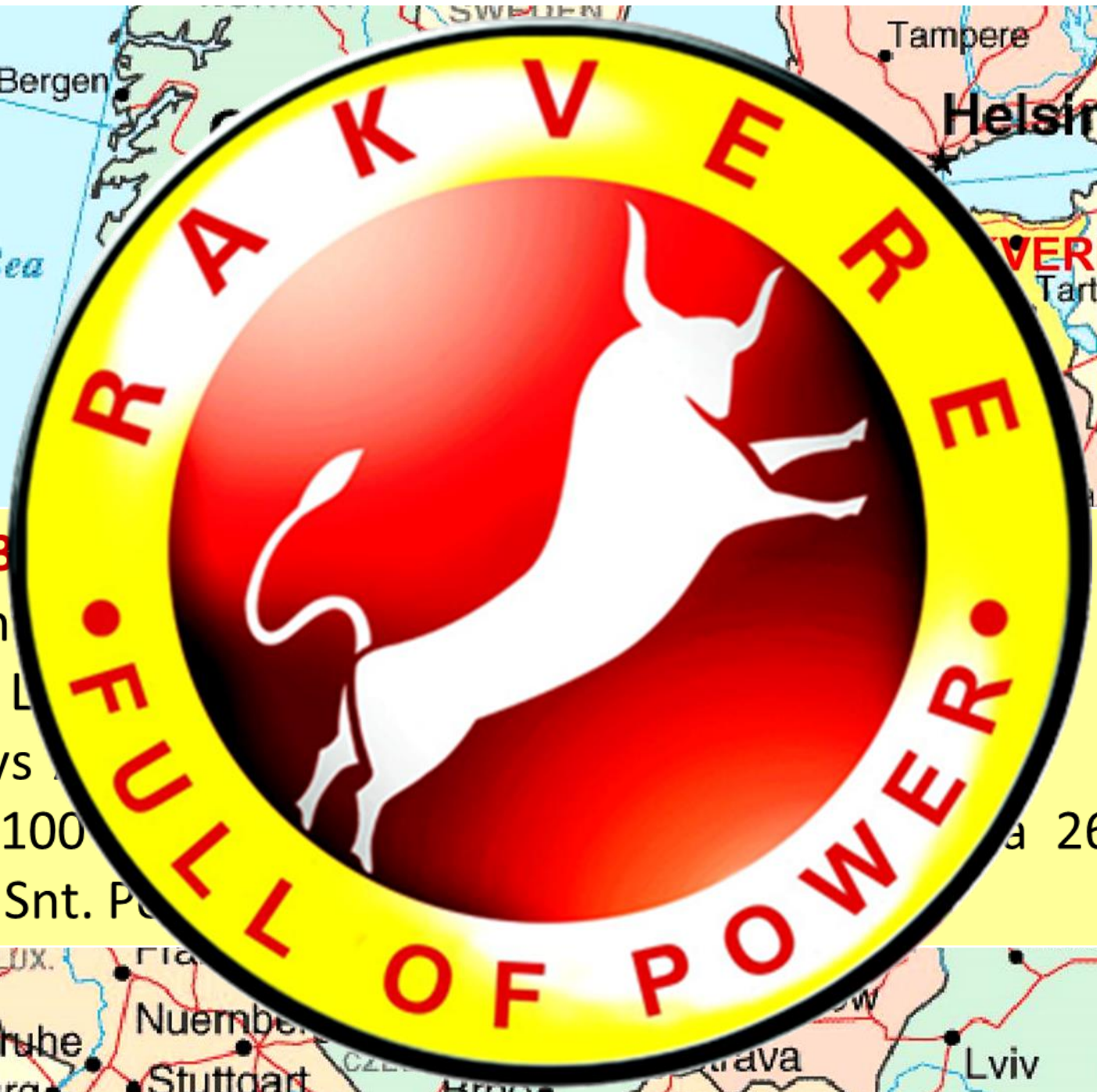
- **10.03.1965.**
- **Tartu University – Master of Law , 1991**
- **My municipal background**
- Member of City Council of Rakvere 1993 -...;
- **Mayor of Rakvere** 2002 – 2012,
- 2008 -2012 The initiator of the **European - Covenant of Mayors** - in Estonia  
[www.eumayor.eu](http://www.eumayor.eu)
- **Committee of the Regions** – member of the commission of Environment and Climate Change (ENVE) 2010 – 2012, 2015 ...
- **Vice President of UBC (Union of the Baltic Cities)**- 2011-2013
- Director of Development and education Estonian Smart House Competence Centre in Rakvere 2012 ...

# ANDRES JAADLA



- **My housing background**
- **Founder /chairman /member/ of the board Estonian Union of Housing Cooperatives EKÜL - 1996. -**
- **Member of the board - BUCHA - Baltic Union of Housing Cooperatives 1999...-**
- **Member of the board – Housing Europe – 2014 ...**

Housing Europe - network of 42 national & regional federations gathering about 41.400 providers in 22 countries who manage over 25 million homes)



**FACTS AB**

First men  
Rights of L  
Nowadays  
Situating 100  
km from Snt. P

# The Covenant of Mayors: unprecedented growth



**1<sup>st</sup> Covenant of Mayors Ceremony**  
/10 February 2009/

Hemicycle of the European Parliament, Brussels

**370**  
cities



We made a plan ...

# **SUSTAINABLE ENERGY ACTION PLAN**



**6 steps to smart and  
sustainable  
development of Rakvere**

# SUSTAINABLE ENERGY ACTION PLAN (SEAP) IN JUNE 2009

**District heating** – from fossil fuels to biofuels

**Heat consumption** – efficient use in municipal and residential buildings, reconstruction and insulation of buildings

**Water consumption** – efficient use in municipal and residential buildings, possible use of green electricity in this sector.

**Street lightning** – Green energy, efficiency and green electricity in this sector.

**City planning** – sustainable development, car free movement, alternatives to motor vehicles.

**Urban transport** – from fossil fuels to biofuels

# **District heating** from fossil fuels to biofuels

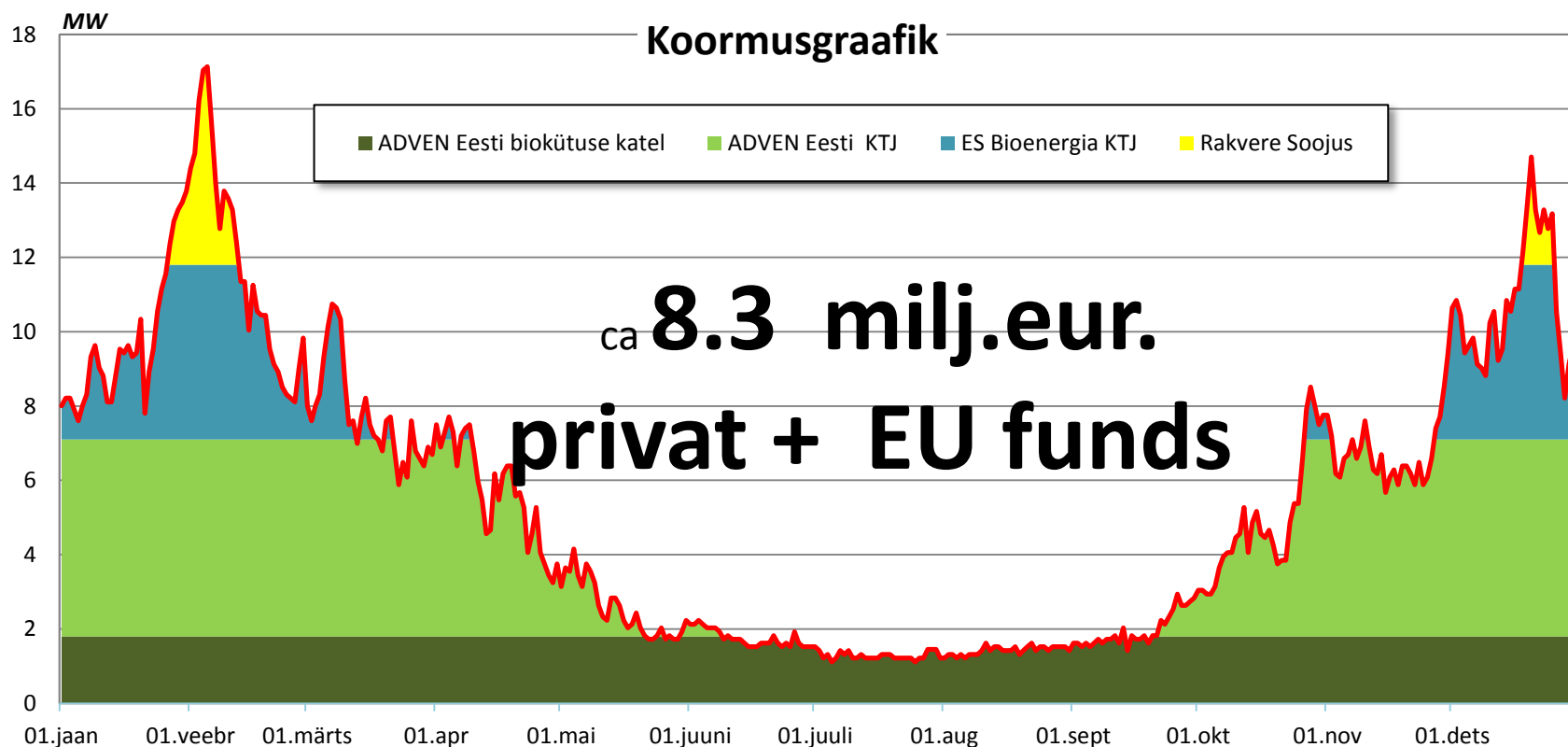


# 2014 - district heating – 100% from fossil fuels to biofuels (wood chips)



# Rakvere heat input 2014

The selling price of heat has decreased  
**68,86€/MWh -> 56,63 €/MWh**



**Heat consumption –**  
efficient use energy in  
municipal and residential  
buildings, reconstruction  
and insulation of buildings

# Reconstruction of a Rakvere Elementary School into a low-energy consumption building





# Reconstructing Rakvere Elementary School into a 2.3 milj. eur. low energy consumption building

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# RAKVERE MUSIC SCHOOL



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Euroopa Liit  
Euroopa  
Regionaalarengu Fond



Eesti tuleviku heaks

# RAKVERE MUSIC SCHOOL



European Union  
Regional Development Fund

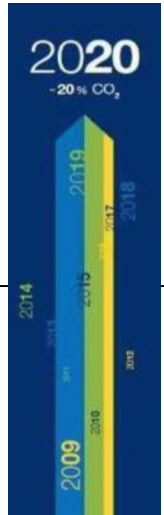


Investing in your future



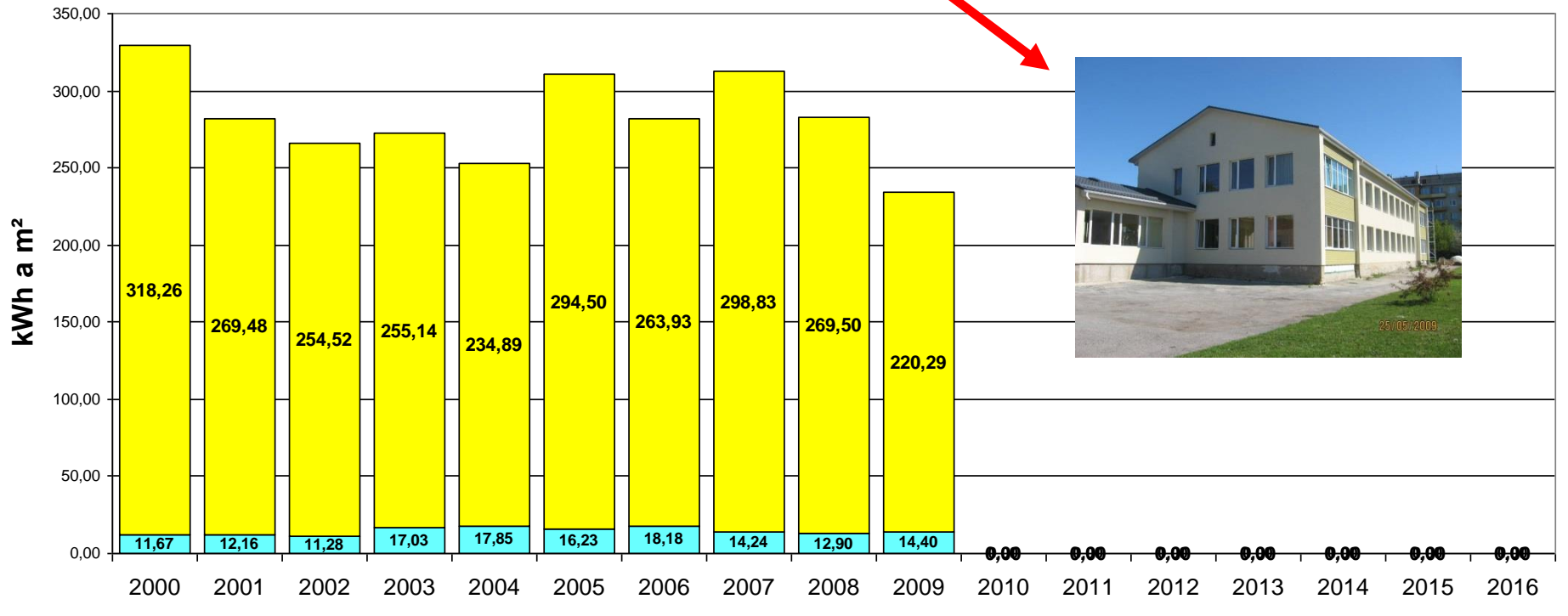
DRES JAADLA

# RAKVERE MUSIC SCHOOL



## Energy specific consumption kWh/m<sup>2</sup>, Rakvere Music school

■ Elektri erikasutus hoone pinna kohta    ■ Soojuse erikasutus hoone pinna kohta





# Insulation of multiapartment buildings – pilot project in Rakvere

Seminari street in Rakvere

Approx. 70% of Rakvere's citizens live in multi-apartment buildings.



The city produces ca  
16 000 tons of CO<sub>2</sub>.

CO<sub>2</sub> emissions would be  
diminished by 8,2% if all  
multiapartment  
buildings went through  
insulation works of  
houses



# Programm Baltic Sea Region 2007-2013

## “Urb. Energy: energy efficient and integrated urban environment action”



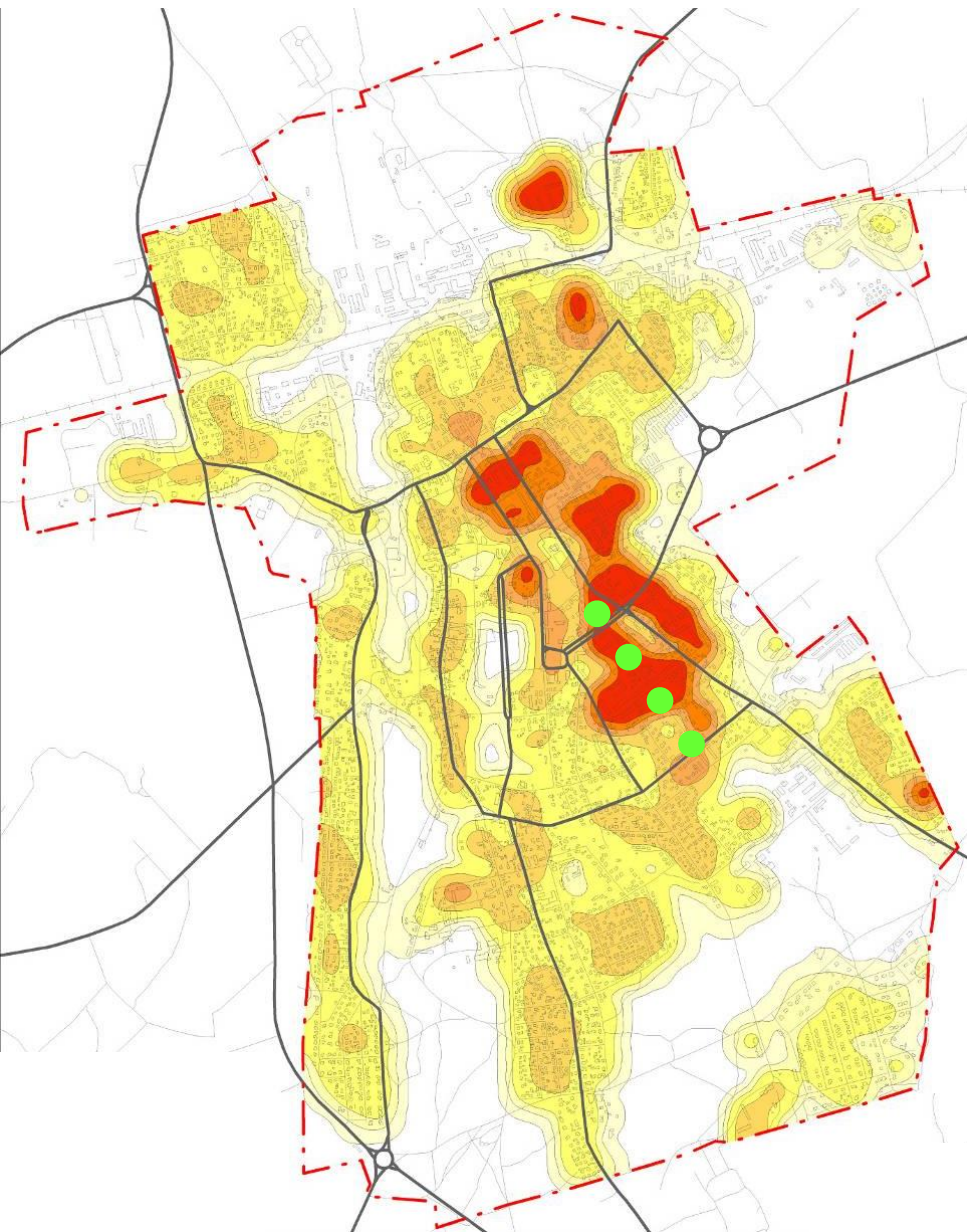
Part-financed by the European Union  
(European Regional Development Fund)



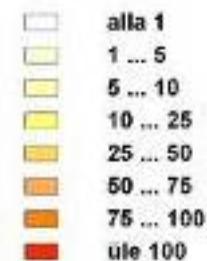
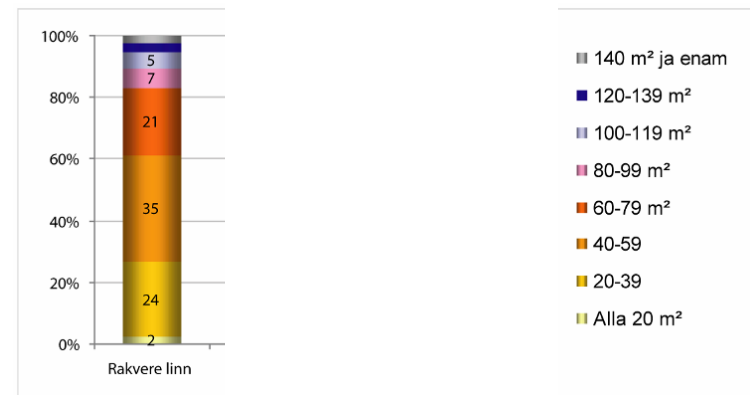
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- ✓ District with the highest density of population:
- ✓ 18 apartment buildings,
- ✓ 8 different types of apartment buildings,
- ✓ about 900 apartments, area 1,8km<sup>2</sup>



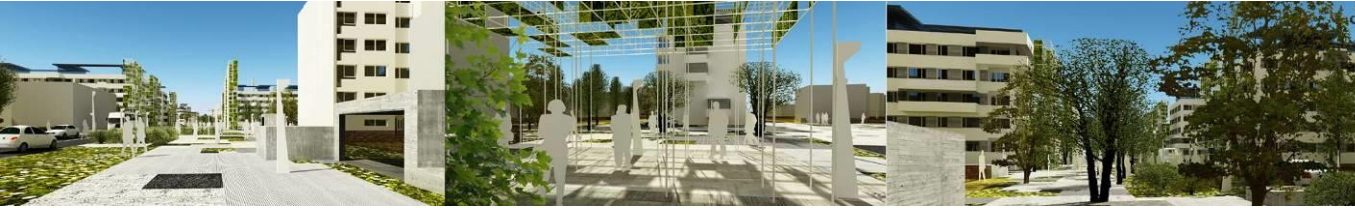
**URB –  
ENERGY  
80 000 eur.**

# Architectural competition

## VÖIDUTÖÖD

„Elementaalne” autorid: Kai Süda, Diana Taalfeld ja Risto Parve OÜ KARISMA Arhitektid

„Linna Metsa” autorid: Kadri Klementi, Aet Ader, Grete Soosalu, Kaidi Õis, Karin Tõugu, Mikk Meelak ja Kalle Komissarov



**OSTUAUHIND:** „Roheline Konstruktor” autorid Mihkel Tüür, Ott Kadarik ja Villem Tomiste Arhitektuuribüroo KOSMOS OÜ

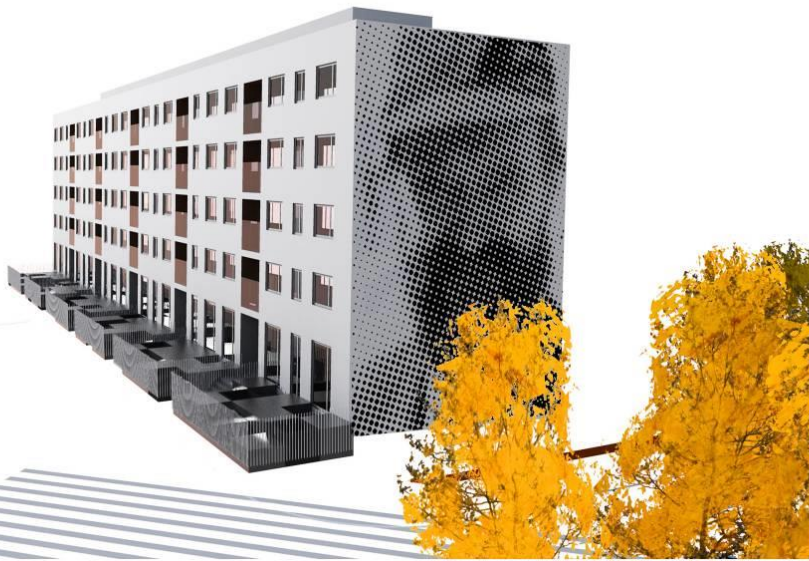


**OSTUAUHIND:** „Liinid” autorid Eva Kedelauk, Kristel Niisuke, Maie Raud, Kristiina Remmelkoor, Olav Remmelkoor ja Siim Tiisvelt



**OSTUAUHIND:** „Fake Forest” autorid: Lea Järve- Eronen, Erik Joasare ja Tiina Tuulik Arhitektuuribüroo Järve & Tuulik

# IDEAS

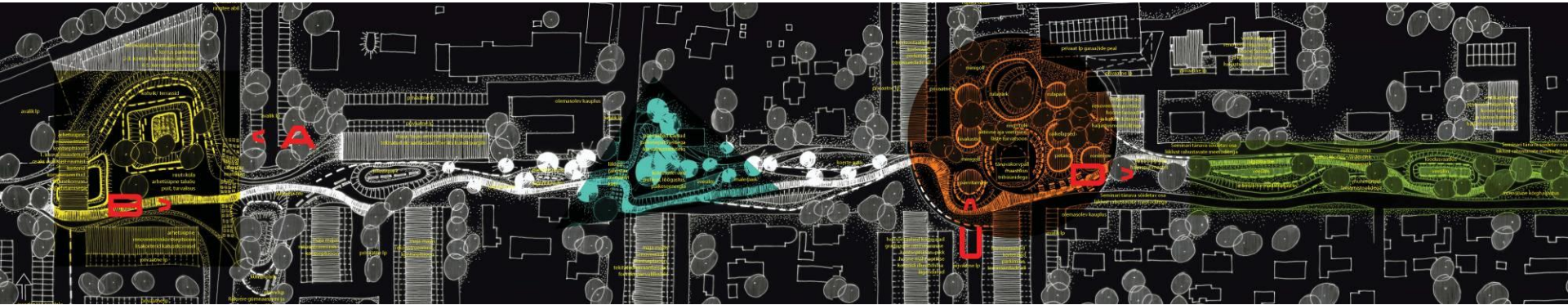


**OSTUAUHIND:** „  
VÕISTLUSTÖÖ Baruto” autorid Anna-Liisa Unt, Martin Mc Lean, Robert Kähr ja Tiit Sild Sport OÜ

Võistlustöö „Elementaalne” autorid: Kai Süda, Diana Taalfeld ja Risto Parve OÜ KARISMA Arhitektid

**SEMINARI tn.**

**strategy “A”**





# SEMINARI tn.

# strategy "B"



VÕIDUTÖÖ „Linna Metsa”

autorid: Kadri Klementi, Aet Ader, Grete Soosalu, Kaidi Õis, Karin Tõugu, Mikk Meelak ja Kalle Komissarov



Enne ja pärast: Kortermaja lahendus praegu



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SEMINARI

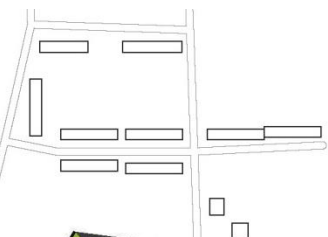
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Before



# Plans



katust tõstetakse  
tekib lisakorus



**NU-NU Arhitektuur**

Today







VÕIDU 42



VÕIDU 44



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**Water consumption**  
– efficient use in  
municipal and  
residential buildings.

2020

-20% CO<sub>2</sub>

2014

2019

2018

2015

2012

2009

2010



13,9 milj eur

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Euroopa Liit  
Ühtekuuluvusfond



Eesti tuleviku heaks

# **Street lightning –** Green energy, efficiency and green electricity in this sector.

# All street lights and municipal buildings in Rakvere use Green Energy since June 2009



Commitment #6670

<http://eu-smartcities.eu/commitment/6670>

THE "HUMBLE LAMPOST"  
KICK-OFF EVENT – 3<sup>RD</sup> DEC'14  
BRIEFING & 'HOMEWORK'



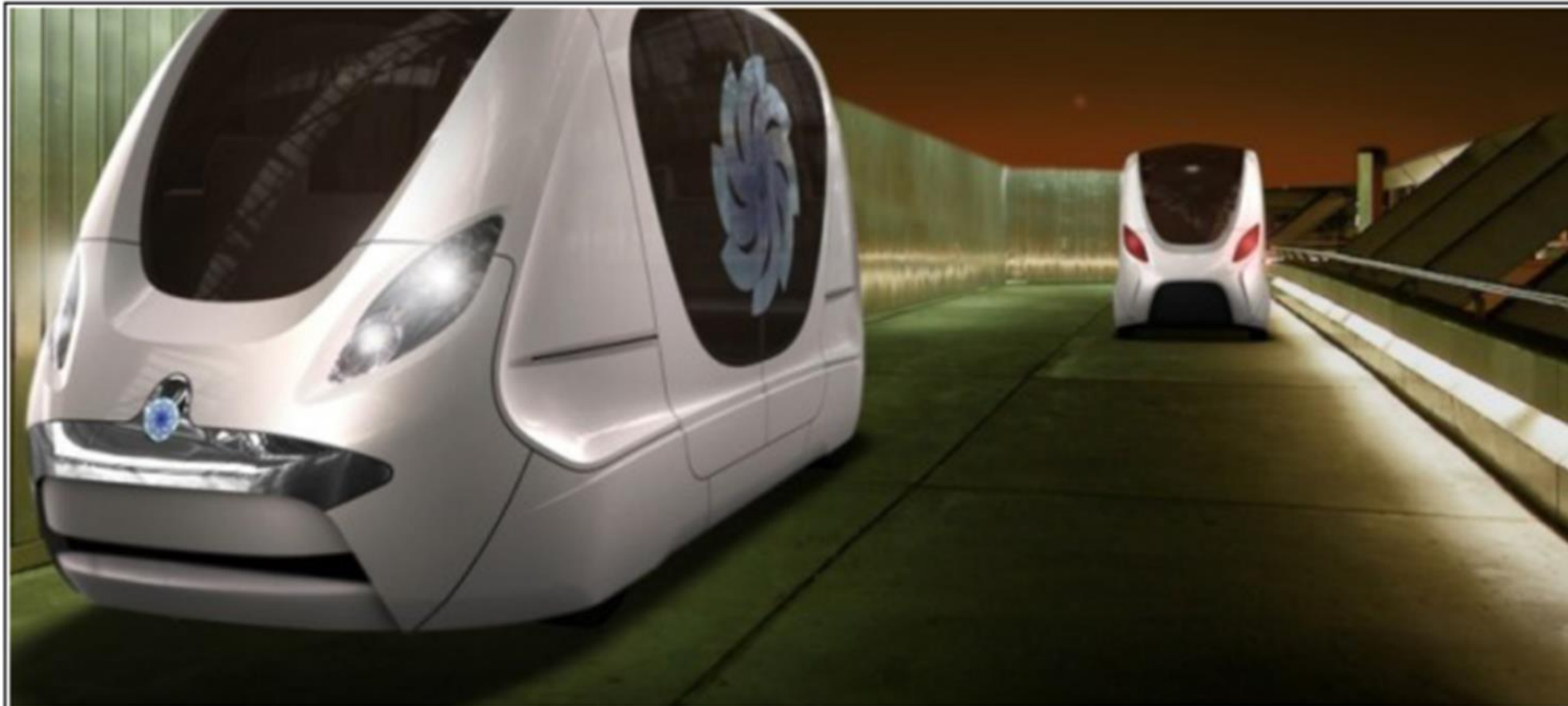
Smart Cities & Communities  
European Innovation Partnership

# Urban transport

– from fossil fuels  
to biofuels

# New transport ideas, electric cars, bikes (plans Horizon 2020)

## MICROBUS: THE NEW PARADIGM FOR URBAN MOBILITY



**City planning –**  
sustainable and  
smart  
development city  
of Rakvere

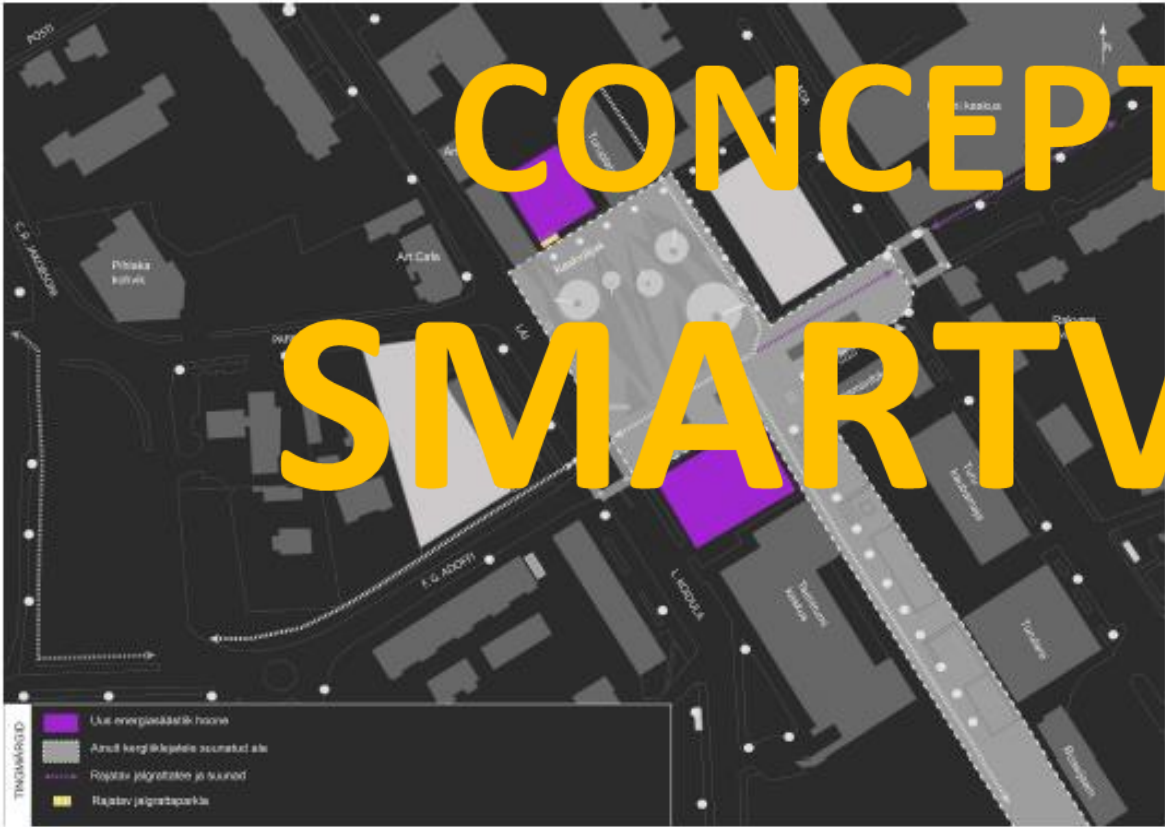


A silhouette of a bull's head with large, curved horns is positioned on the right side of the image. The background is a sunset or sunrise scene with a bright sun low on the horizon, casting a warm glow. The sky transitions from a pale blue at the top to a bright orange near the sun. The overall composition is dramatic and emphasizes the strength and power of the bull.

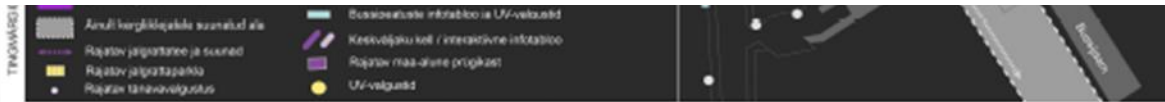
**SMARTVERE  
TARIKVERE**



# SUSTAINABLE CITY PLANNING



Etapi peamiseks eesmärgiks on kujundada olemasolev linnaruum veelgi sidusamaks ning kasutajasõbralikumaks.



```
function connectToServer() {
  var xhr = new XMLHttpRequest();
  xhr.open('GET', 'http://api.example.com/status');
  xhr.setRequestHeader('Authorization', 'Bearer ' + token);
  xhr.onreadystatechange = function() {
    if (this.readyState === XMLHttpRequest.DONE) {
      if (this.status === 200) {
        // Success
      } else {
        // Error
      }
    }
  };
  xhr.send();
}
```

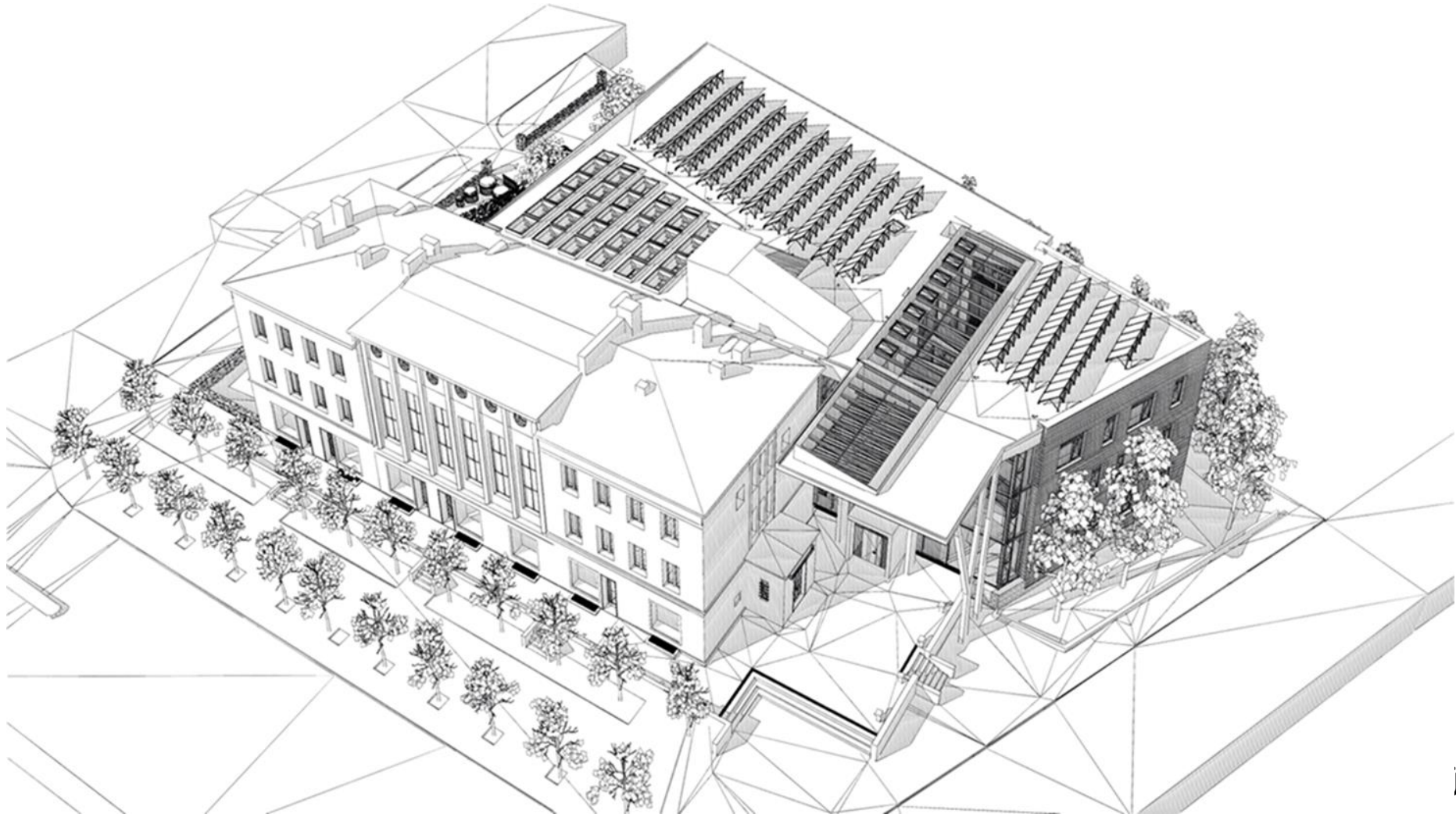
>//ACCESS GRANTED



# SMART CITY RAKVERE

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# Estonian Smart House/Smart City Competence Centre in Rakvere



# Estonian Smart House/Smart City Competence Centre in Rakvere

- *The new building of the competence centre will be the **first public near-zero-energy building in Estonia** that utilizes different building automation technologies and has been engineered from start to finish using the BIM methodology.*
- *Different sustainable energy sources, like solar panels and geothermal heating pumps will be used for the heating of the building. A unique demo and testing environment will be set up inside the centre that enables to develop and test different building automation systems*

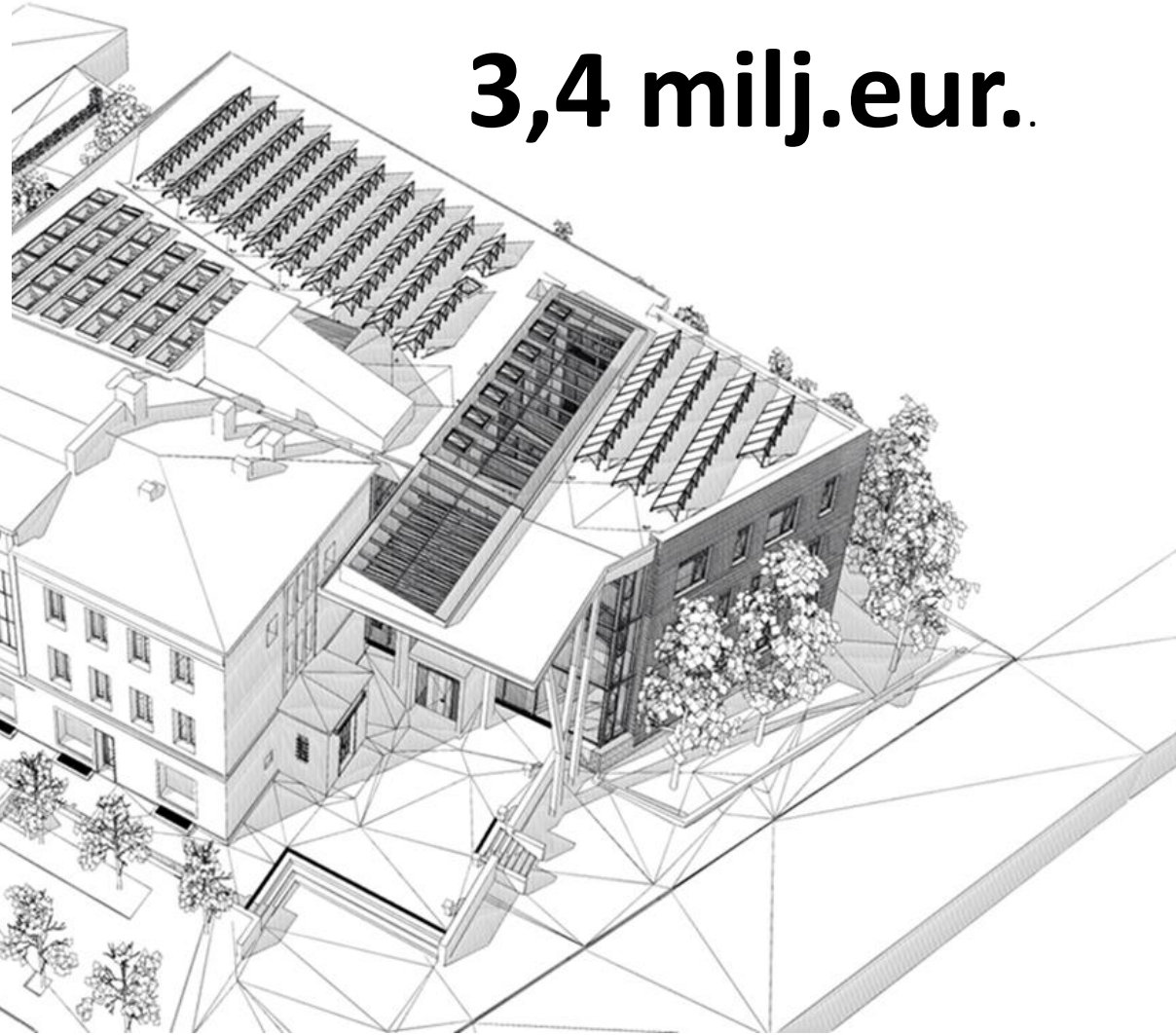
# Estonian Smart House/Smart City Competence Centre in Rakvere

- *Rakvere Smart House Competence Centre is a **new competence centre in Estonia** that focuses on **smart house / intelligent building / smart city / technologies**.*
- *With partners from **most of the universities in Estonia**, regional vocational schools, companies and local authorities the competence centre contributes as a central hub of the industry to support development and innovation.*

# Estonian Smart House/Smart City Competence Centre in Rakvere

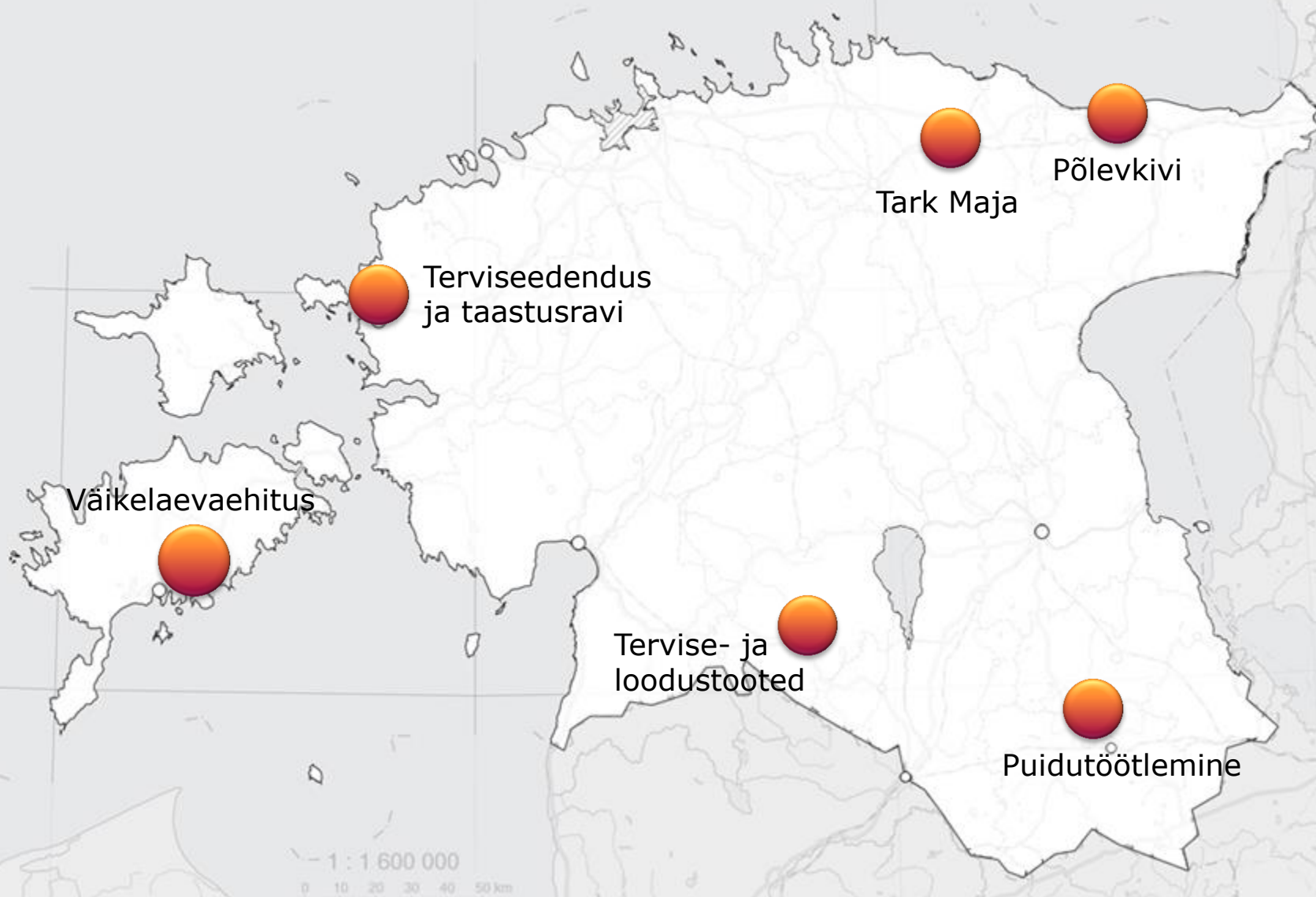


European Union  
Regional Development Fund Investing in your future



**3,4 milj.eur.**

# Competence centres in Estonia



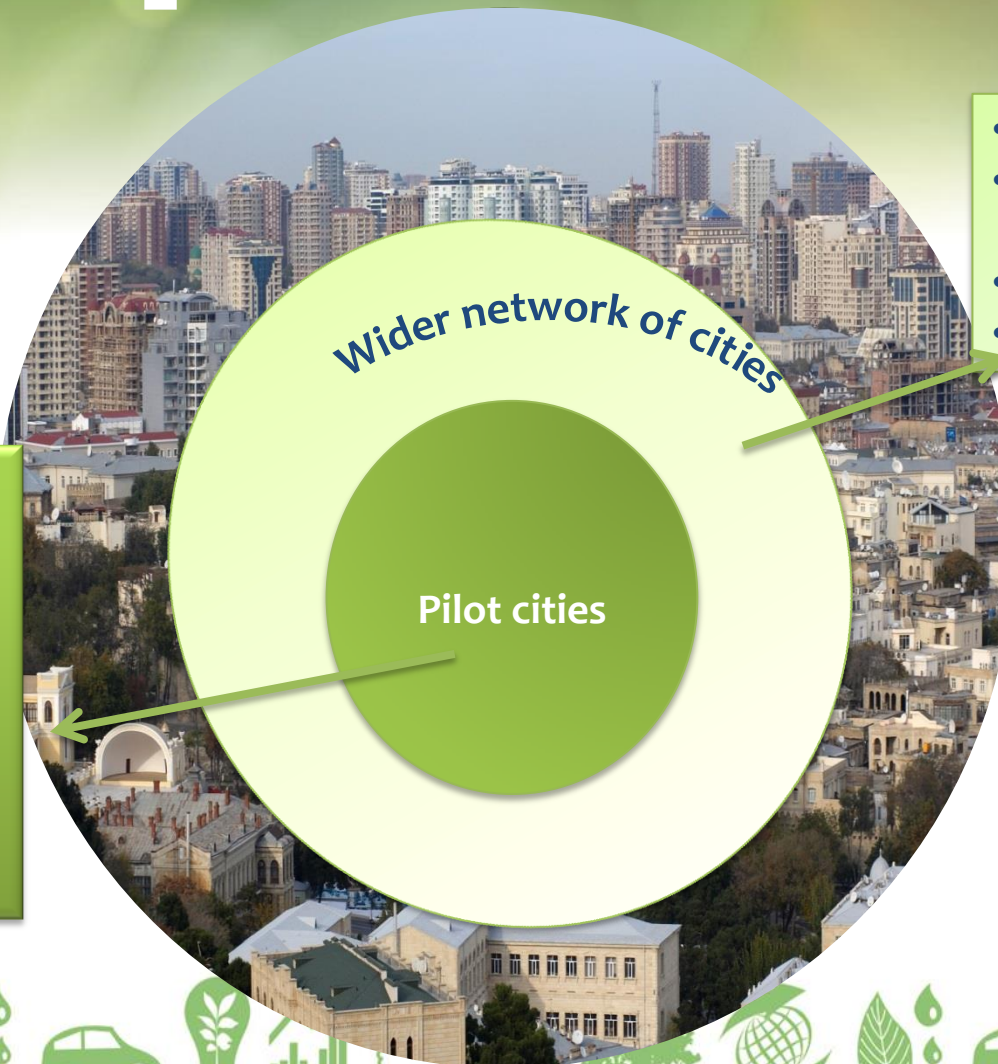


# SMART URBAN SOLUTIONS FOR DEVELOPING AND TRANSITION COUNTRIES





# The selected smart pilot cities in World



- Amman – Jordan
- Astana – Kazakhstan
- Dubai – U.A.E.
- Vienna - Austria

- Goris - Armenia
- Graz - Austria
- Rakvere - Estonia
- Rimini - Italy
- Turov - Belarus
- Vinnitsa – Ukraine



We have achieved ...the best practise from 4363  
cities...

Article 1407 Recalculer cette page \*



**Covenant of Mayors**  
Committed to local sustainable energy

[www.eumayors.eu](http://www.eumayors.eu)

**Newsletter**

Covenant Monthly Newsletter

July - August 2012



## Reaping the benefits of energy efficiency

**Interview with Andres Jaadla, Mayor of Rakvere, Estonia**

After signing the Covenant of Mayors in January 2009, Rakvere became the first city in Estonia to take the political commitment to adopt a Sustainable Energy Action Plan (SEAP) in order to meet EU climate and energy targets. This SEAP, which fostered the emergence of an energy efficiency movement

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# Sustainable and smart development of Rakvere

**2009 – 2015**

**43** - financed project applications.

Investments **2009 – 2014**

**ca 47 173 363 EUR**

- Almost the total amount **of three year city budgets !**
- 2012 – most investments **per inhabitant 268 EUR** in Estonia!

Saving  
 $\text{CO}^2$   
42 %



# Welcome to Estonia !



**Workshop “Smart City Indicators“**

**4th-5th of June 2014**

**Rakvere, Estonia**

**[www.rakveretarkmaja.ee](http://www.rakveretarkmaja.ee)**



Thank you !

Even large things start from  
small matters

[www.rakveretarkmaja.ee](http://www.rakveretarkmaja.ee)