ENER/FP7/609127/"READY"

Resource Efficient Cities Implementing Advanced Smart City Solutions - READY

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READY Training module for the advanced training programme and report

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Dissemination level		
PU	Public	X *
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	X **

* The report itself and the training material are public.
** The annexes on the ATP sessions, containing personal data like participant lists and photos from events, are restricted.

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Scope of the deliverable

The READY project (Resource Efficient cities implementing ADvanced smart citY solutions) aims at developing and implementing innovative solutions to reduce the needs for fossil fuels and release of CO2 to nearly zero in the two demonstration sites. The scope of the deliverable is to document the Advanced Training Program (ATP) development process, materials developed, and the ATP activities carried out in Sweden and Denmark.

The project started in December 2014. The development of the ATP started 2017, the training sessions started in 2018, and ran through 2019 to 2020.

Context of the deliverable

This deliverable corresponds to task 8.6 of the READY project: Advanced Training Program on Smart Cities Development.

Perspective of deliverable

This report is intended to provide an overview of the Advanced Training Program (ATP) materials developed, and the ATP activities carried out in among other Växjö and Aarhus, as well as a short description of the development process. The report consists of a brief overview and several separate annexes – one annex containing the training materials, one for the development process and an annex for each of the implementation activities. The annexes are in electronic format only. The training material is available via http://www.smartcity-ready.eu/ and will be used by the partner organizations in their future training and dissemination activities, as well as when the municipalities have visitors.

Involved partners

All project partners have been involved in the preparation of this deliverable: the training material and this report. Lead has been the Energy Agency for Southeast Sweden, and Aarhus Kommune, Växjö Kommun, COWI, DDHA/Grøn Energi, VEAB/Växjö Energi, Aarhus University, Linneaus University, Växjöbostäder, Boligforeningen Ringgården, Wexnet, E.ON Danmark, Racell, Lithium Balance, Lietuvos energetikos institutas, AIT Austrian Institute of Technology, LGI Consulting, CA-fastigheter, Kamstrup, Danfoss and Kauno energija have contributed.

Summary

The scope of the deliverable is to document the Advanced Training Program (ATP), the materials developed and the ATP session arrangements.

The purpose of the ATP is to relay the findings from READY to relevant target groups, building capacity. The objective is to increase the number of advanced smart city solutions for resource efficient measures.

Around 400 civil servants, politicians, energy consultants and employees within the energy and building field, and national, regional, and local government personnel have participated in the advanced training programme. See list of the trainings below.

Index

1 Introduction

1.1 Context

The READY project (Resource Efficient cities implementing ADvanced smart citY solutions) aims at developing and implementing innovative solutions to reduce the needs for fossil fuels and release of CO_2 to nearly zero in the two demonstration sites. These innovative solutions include, but are not restricted to, photovoltaic thermal (PVT) solar cell, low temperature district heating, energy efficiency renovation of multifamily houses. The project started in December 2014.

The purpose of task 8.6 is to produce and execute an advance training programme, building on the READY results and findings.

1.2 Objectives of the deliverable

The objectives of deliverable D8.9 "Training module for the advanced training programme and report" are the following:

- Present the development process
- Describe the training material structure
- Document the training sessions

2 Development process

As the purpose of the ATP is to relay the READY findings, we deemed it important to involve all partners, as they are the ones with the knowledge and experience from the project activities. There were three levels om involvement in the production process, the core work group, the extended work group, and all project partners.

The core workgroup was led by task leader ESS-SE and involved COWI, Växjö and Aarhus municipalities. Via email conversations and online meetings, they drove the development forward. The extended workgroup was all with responsibility for the modules and submodules development. All partners were informed at partner meetings and by email of the development of the ATP and were involved in major decisions.

The advanced training program consist of four modules, based on the content of the READY project, with a general introduction of the project and its objective. The module development was led by one partner each, even though all partners participated in various degree.

- General introduction – COWI
- Green governance – Växjö
- Sustainable retrofitting of buildings – ESS
- District heating/cooling – Dansk Fjernvärme
- Mobility Management & electric vehicles – E.ON

2.1 The development steps

May 2017 – outline of the advanced training programme was presented to all partners at the meeting in Paris. During the workshop, the submodules were developed. Decision on responsible partners for the development of the modules and submodules of the ATP.

September 2017 – workshop in Växjö were the content plan were developed in detail, Decision on the content and time plan for production of the training material were set up.

November 2017 – first draft of content (power point slides) were delivered from responsible partners.

February 2018 – all content delivered.

March 2018 – dry run of the training by partners at partner meeting in Lyngby, Denmark. The dry run was very valuable for several reasons; to assess the content concerning time, relevancy, missing aspects, design, and such. It was also a definite deadline which pushed partners to deliver their parts to the training material.

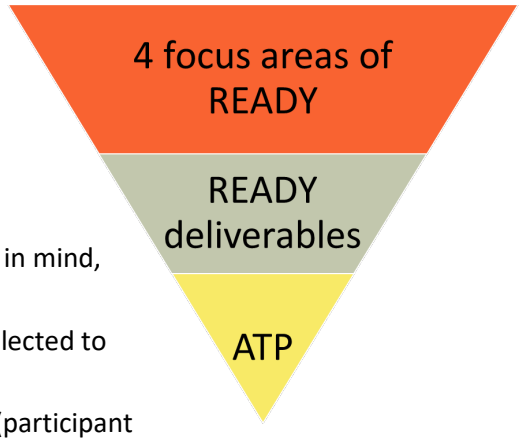
The material was then updated before each ATP sessions as new data, learnings and installations were added.

2.2 Annex 9 content

- 170310 Skype meeting to discuss first outline created 170214
- 170505 Presentation and workshop at GA in Paris
- 170920-21 Participant list, presentation, agenda and photos from the workshop in Växjö
- 180207 GA presentation ATP status
- 180312-13 Dry run ATP

3 Training material

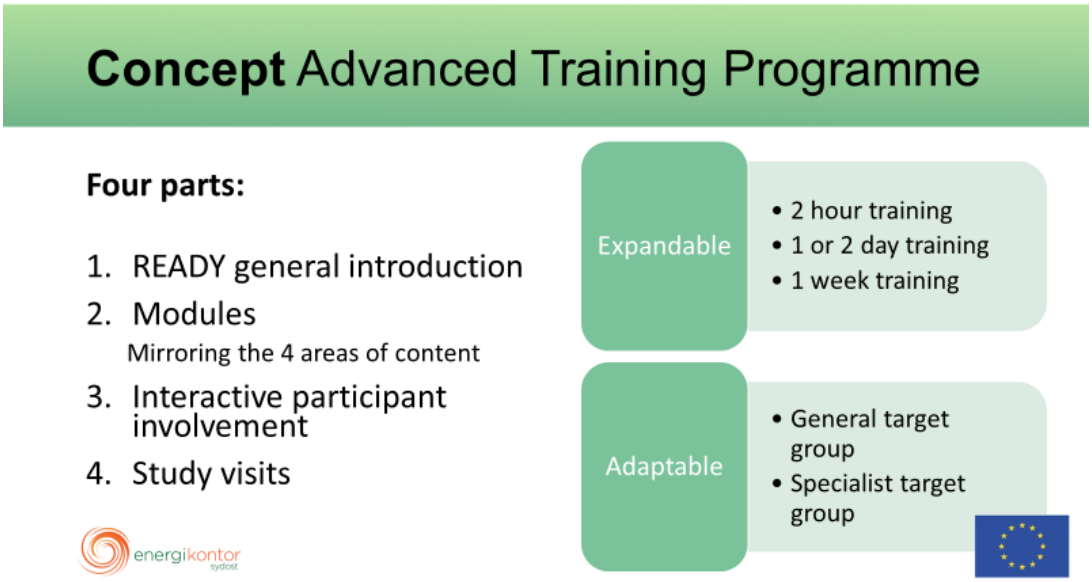
The purpose of the training sessions is to relay the findings from READY to relevant target groups, building capacity.



3.1 General set-up

- A standard seminar module takes 2 hours to execute.
- Each module is developed with the main target group in mind, when planning for the angle of the content.
- Within each module, some parts of the content are selected to be presented also to the other target groups.
- All modules can be developed with expandable parts (participant interaction; exercises like working on own examples, quizzes, polls, as well as study visits etc) so the training can last for up to a week.
- All four modules should also be possible to execute in a condensed version in 1 hour (1 main module and three with selected parts).
- All modules are developed in English, but national trainings may be held in national language (translation of training material optional).
- Starting point for content is the READY deliverables, achieved and coming.

3.1.1 Concept



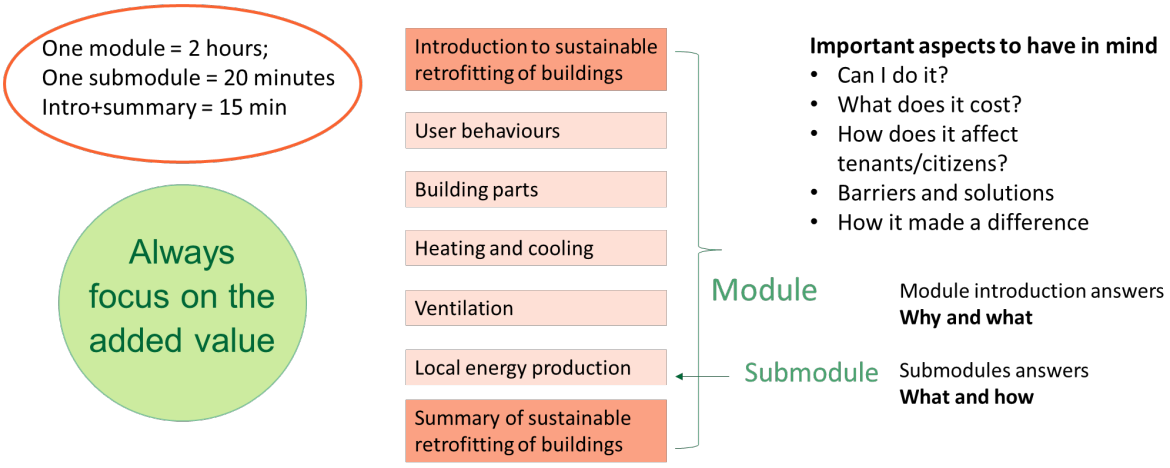
3.2 Modules and submodules plan

The plan for modules and submodules were built to be expandable. The lighter coloured parts are submodules where there is more in-depth information. The darker coloured parts are general information that always should be presented, even when the material is adapted to a special interest target group.

3.2.1 Modules and submodules

Introduction to READY ATP Project scope and purpose	Intro to **Sustainable retrofitting of buildings**	Introduction to **Distric heating/cooling**	Introduction to **EV and Mobility Management**
Introduction to **Green governance**	User behaviours	Techniques	Strategic plan
Policy/SEAPs	Building envelope	Environmental benefits	EV business models and organisation
Business models	HVAC-systems	Energy system	EV infrastructure
Sustainable city planning	Energy production and recovery	Business models	Mobility as a service
Summary of Green governance	Summary of Sustainable retrofitting of buildings	Surplus heating	Summary of Mobility Management and EV
		Summary of Distric heating/cooling	Summary of READY ATP and findings

3.2.2 Module development instructions



4. ATP Activities

The 8 training sessions have together reached over 400 persons, from 18 countries. There have been researchers, and representatives from municipal public servants, county board civil servants, regional politicians, national administrative authorities, energy consultants, development companies and supply businesses participating in the training session.

The original plan was to arrange two full week trainings, one each in Denmark and Sweden. The project consortium came to the conclusion that the effect and reach would be greater if we instead divided the training into shorter segments. The training programme structure is built in a way to facilitate both a weeklong training and a condensed version for a couple of hours. That way the partners could adapt the trainings to various situations and target groups, using the expandable modules plan.

The training sessions have ranged from a couple of hours to two or three days, according to the plan with expandable modules.

Due to the Covid-19 situation, the activities planned for spring 2020 had to be reorganised for online execution. That worked very well for the seminar parts of the training, but all planned study visits had to be cancelled.

The ATP activities implemented are listed in the table below. More details on each of these activities can be found in the associated annexes. Each annex contains a description of the activity, program, participant lists, assessment, photos, and materials.

Annex	Activity
1	Type: ATP pilot seminar Title: **Advanced training programme for Smart City Development** Dates: May 22–24 2018 Location: Kaunas, Lithuania

	Host: Lietuvos energetikos institutas and Kauno Energija, together with the Energy Agency for Southeast Sweden. Participants: 18; public servants in the buildings/construction field, energy field researchers, project manager within heating/district heating and READY project partners. Nationalities represented: Swedish, Danish, French, Austrian and Lithuanian.
2	Type: ATP seminar Title: **EnergiTing Sydost 2018** Date: November 16, 2019 Location: Mönsterås, Sweden Host: The Energy Agency for Southeast Sweden Participants: 36; from energy companies, municipal public servants, county board civil servants, regional politicians. Nationalities represented: Swedish
3	Type: Ph.D. course Title: **Analyses techniques for the transformation of buildings and distribution networks to 4th generation district heating** Dates: 21-25 January 2019 Location: Aarhus, Denmark Host: Primary hosts were Aarhus University, AVA/Aarhus municipality and Grøn Energi Participants: 11 researchers and employees from supply businesses and an equipment producer Nationalities represented: Chinese, Danish, Lithuanian, Russian and Spanish.
4	Type: Two training sessions by Aarhus Climate Secretariat on the role of municipalities in the smart green transition in energy supply and in planning the energy system using READY as case. Title: **The Municipalities in the Future Energy Supply** Date: 26 April 2019 Location: Fredericia, Denmark

	Host: Kommunernes Landsorganisation, which is the national association and interest organisation of the 98 Danish municipalities. Participants: Approximately 2*30 representatives from Danish municipal technical and environmental departments and local politicians. Nationalities represented: Danish
5	Type: ATP seminar and study visit Title: **Smart Energy City Conference** Date: May 21–23, 2019 Location: Växjö, Sweden Host: The Energy Agency for Southeast Sweden Participants: 72 Swedish and international participants, consisting mostly of energy consultants and civil servants. Nationalities represented: Swedish, Danish, Spanish, French, Austrian, Belgian, Croatian, Italian, Lithuanian, Scottish, Irish, Greek, Finnish, Slovenian, Romanian and German.
6	Type: ATP webinar Title: **Webinar om renovering af boligblokke og fjernvarme** (renovation of building blocks and district heating) Dates: May 19, 2020 Location: Webinar, Denmark Host: Grøn Energi (Danish District Heating Association) Participants: Employees from public administrations and development companies (30 participants). Nationalities represented: Danish
7	Type: ATP webinar Title: **Energi smart city – a webinar in four parts** (Energismart stad – ett webbinarium i fyra fristående delar) Dates: May 27, 2020

	Location: Webinar, Sweden Host: Växjö Municipality, Energy Agency for Southeast Sweden, VEAB, Växjöbostäder, Wexnet. Participants: Politicians and civil servants from public administrations, representatives from companies and national administrative authorities. In total 112 unique participants (half of them participated in two, three or all of the webinars). Nationalities represented: Swedish, danish The webinars were recorded and can be viewed via http://energismartstad.se/
8	Type: ATP webinar Title: **Smart Energy City Advanced Training Programme, Aarhus** Dates: ATP webinar from Aarhus 9th of June 2020 Location: Webinar, Denmark Host: Aarhus Municipality Participants: 34 Danish and international participants, consisting of public, private and knowledge institutions, as well as a journalist from Danish Radio 4. Nationalities represented: Danish, Swedish, Belgian, Austrian, and Lithuanian. The webinars were recorded and can be viewed via http://www.smartcity-ready.eu/

5. Summary

Put together in this training programme, the scope and innovativeness of the READY experience is impressive. The material developed is extensive. It also forms base for project dissemination, as the major impacts of READY is compiled in the material.

The system of adaptiveness built in the ATP material makes it easy to use for all partners when continuing dissemination after the project ends.

The training material can be downloaded at http://www.smartcity-ready.eu/.