WP T3 | ACTIVITY T3.1 | DELIVERABLE T3.1.3
COMMUNITY SPECIFIC ACTION PLANS

PARTNER RESPONSIBLE: MUNICPALITY OF APELDOORN

31-06-2019
Project Number: NWE 588

Project acronym: cVPP

**Project full title:** Community-based Virtual Power Plant (cVPP): a novel model of radical decarbonisation based on empowerment of low-carbon community driven energy initiatives

**Project start date:** 20-Sep-2017 (36 months)

Project end date: 19-Sep-2020

**Work Package:** WP. T3 Replication

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**WP Leader:** Municipality of Apeldoorn, GA

**Partners involved:** Municipality of Apeldoorn, GA/ Kamp C/ Templederry Renewable energy Supply Limited. T/A Community Renewable energy supply, CRES

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**Authors:** Randall Hanegraaf, Maro Saridaki, Jet Groen, Stephanie Cummins, Gregg Allen
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1. **INTRODUCTION**

1.1. **GENERAL**

The goal of the Interreg cVPP project is to boost the production and distribution of local renewable energy and simultaneously increase democratisation of the energy supply. The project has three main components:

1. the conceptualisation and realisation of a community-based virtual power plant by three bottom-up energy initiatives in the Netherlands, Belgium and Ireland.
2. creation of a Mobilisation and Replication model to facilitate uptake of the cVPP concept to new areas/communities. MoRe is based on theoretical knowledge of community energy and practical lessons gathered during the project.
3. Testing and assessing the MoRe model in follower communities. This allows to facilitate and observe replication of the cVPP concept in real time during the project. This enables MoRe partners to study the attempts at replication of an innovative technology to new communities and include lessons learned in the final model.

The conceptualisation and realisation of a cVPP in this project takes place in three highly motivated front runner communities in different contexts (NL, BE, IR). These early adopters are willing to be a test ground for cVPP. Follower communities for replication differ in physical and social context as well. This report is part of step 3) Testing and assessing the MoRe model in different communities, which is also referred to as ‘Replication’.

The former report, T3.1.2 – community profiles- describes the social and physical characteristics of the selected communities. This report will follow up on the former report by describing community specific action plans.

Each of the replicating partners has differing context and situations, which makes it impossible to describe the community profiles through a similar format. The description of the community specific action plans will therefore vary per partner, but will consist of a ‘general approach’ and a ‘specific approach’. The results will be analysed after the community specific action plans have been finalised, and ‘common lessons’ will be identified if applicable.

1.2. **GOAL**

The main goals of ‘Replication’ are:

1. successfully replicate cVPP to the follower communities and
2. gather meaningful lessons from the process,

These goals will be accomplished in several steps:

T3.1: Engaging local stakeholders and selecting communities
1. Stakeholder meetings
2. Community Profiles
3. Community Specific action plans

T3.2: Community building

1. Community meetings
2. Competition
3. Letters of intent

T3.3: Testing of the revised MoRe model

1.3. COMMUNITY

Community, in relation to energy system, is a social network of people that collectively engage in energy related initiatives and projects, ranging from renewable energy generation to energy conservation or efficiency. These networks are often place- or interest-based (Klein & Coffey, 2016) but can also be virtual or sectoral (Heiskanen et al., 2010). They may include not only residents but potentially also actors like municipalities and (local) SMEs. The involvement of a community distinguishes community-based from market-based projects such as the VPP because it implies that such initiatives operate on a different ‘community logic’. According to the cVPP project definition, the following Community Energy characteristics will be used:

- Driven by the needs and goals of the community
- Fair distribution of outcomes (benefits, costs and risks)
- Scale technology in line with community needs or agreed upon by (local) community
- High degree of community ownership
- High degree of community involvement in governance and decision making
- High community engagement throughout project.

1.4. DEFINITION OF CVPP

We define cVPP as the following:

A portfolio of community-owned distributed energy resources (DER) aggregated and coordinated by an ICT-based control system, adopted by a (place-based, interest-based, virtual or sectoral) network of people who collectively perform a certain role in the energy system. What makes it community based is not only the involvement of a community, but also the community-logic under which it operates (Van Summeren et al., forthcoming, p.??).
1.5. **READING GUIDE**

This document will describe the specific action plans for each of the replicating partners; Gemeente Apeldoorn, Kamp C and CRES/TEA/CP. GA will describe their attempts so far, the upcoming competition and two specific action plans. Kamp C will describe the reasoning behind, as well as the organisation of the Dream-Dare-Do trajectory aimed at reaching a large number of potential communities in the Province of Antwerp. CRES/TEA will describe the background of their active communities and their respective action plans for the future.
2. COMMUNITY SPECIFIC ACTION PLAN GEMEENTE APEDDOORN (GA)

2.1. INTRODUCTION

GA has selected three different neighbourhoods for the cVPP project. These neighbourhoods have relatively high levels of activity on renewable energy and the energy transition as a whole. They have been selected by GA as ‘project neighbourhoods’ for experimentation with new energy/sustainability related concepts. In order to facilitate these neighbourhoods, a community-level energy consultant (CEC) has been assigned to each of the neighbourhoods.

Three community level energy consultants are sub-partners of GA. They are operating within the three selected neighbourhoods; De Parken, Kerschoten and de Maten. Their job involves setting up energy related projects, representing the residents and acting as ‘bridge’ between the municipality and the residents. They are the key people in the cVPP project and the interactions with the residents and identifying projects that can be linked to cVPP.

Over the last few months GA has attempted to motivate neighbourhoods through the Community-level energy Consultants. We have identified several projects within the neighbourhood that can be used for the cVPP and we have attempted to set up a ‘key group’. A short recap follows.

2.1.1. GA Goals

This document aims to describe the community specific action plan for each of the three neighbourhoods. Within each of the neighbourhoods, the action plan is supposed to lead to:

- Enthusiast communities
- Increased awareness & knowledge of the cVPP concept & project
- Volunteers/residents that are willing to form a ‘key group’
- Input & learning required for the MoRe model
- Identifying the neighbourhoods values & priorities
- Forming some first ideas for cVPP realisation plans

2.1.2. Key group

Experience from Loenen, as well as other related projects in Apeldoorn lead the need of a key group of volunteers/residents. Preferably, the key group will consist of residents with different backgrounds, willing to work on cVPP voluntarily. Sufficient support for a cVPP is important for realisation.

The CEC’s have been trying to motivate key people through their work, projects and communication. However, the cVPP is too complex to explain as a concept. Therefore other energy related subjects (e.g.
storage, electric vehicles) and the values (independence, energy savings) have been used to interest residents. This has been unsuccessful so far.

The next phase of the project will seduce residents into working on the cVPP concept in new ways. Firstly, workshops and meetings will be organised within the selected neighbourhoods. These will be used to transfer knowledge about the cVPP (and energy in general) and to work with the cVPP subject. Secondly, a competition will be organised with price money linked to it, which is a good motivation for communities to organise themselves.

This section will first explain a general approach, which aims at describing the several steps that seem necessary to take for each of the neighbourhoods. Thereafter, a more specific, or detailed, description of the community specific action plans will be described.

2.2. GENERAL APPROACH

2.2.1. Competition & community meetings

A competition will be organised which is open for all residents of Apeldoorn (excluding Loenen). The range is therefore broader than the three ‘project neighbourhoods: De Parken, Kerschoten and De Maten’. We have chosen to do so in order to attract a higher number of communities. Additional communication will still take place in these three neighbourhoods following up on the CEC's effort in these neighbourhoods.

2.2.2. General planning

The planned period for community meetings and competition lasts from August until March 2019 (see below). Each of the elements will be explained accordingly.

<table>
<thead>
<tr>
<th>Action</th>
<th>Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>August 2019</td>
</tr>
<tr>
<td>Competition Kick-off</td>
<td>September 2019</td>
</tr>
<tr>
<td>Workshop 1 (Role &amp; organisation of the community)</td>
<td>October 2019</td>
</tr>
<tr>
<td>Workshop 2 (Community values &amp; effect on cVPP)</td>
<td>November 2019</td>
</tr>
<tr>
<td>Workshop 3 (Technical aspects cVPP &amp; community role in market)</td>
<td>December 2019</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Deadline &amp; judging of the concepts</td>
<td>February 2019</td>
</tr>
<tr>
<td>Closing ceremony &amp; announcement of the winner</td>
<td>March 2019</td>
</tr>
</tbody>
</table>

### 2.2.3. Expected result

The community specific action plan is set up in two different phases; the community meetings (workshops & meetings) and the competition. Each have different expected results.

The community meetings should result in inspiring and informing residents on energy related innovations. We hope to end up with several ‘communities’ or ‘groups or residents’ that are willing to participate in the competition and have sufficient knowledge and understanding of the cVPP concept.

During the competition, we aim to find the most promising cVPP design, which may be used for future implementation. The steps of the competition must be well-document in order for feedback to the MoRe model.

### 2.2.4. Competition design

The cVPP design is still to be determined. However, several main subjects, following the MoRe model, will be used to define the criteria. Each of the workshops have been aimed at these subjects. The criteria of the competition will be further described in a later deliverable.

### 2.2.5. Role & organisation of the community

The cVPP design may include a report on the organisation of the community including a reflection on the type of community they are and the type of roles they have within their community.

Community values & effect on cVPP

The communities will follow the value workshop designed by Wageningen University and used by Loenen. They will be asked to include a section on the values present within their community and the effect on their cVPP design.
Name

The name ‘community-based Virtual Power Plant’ is well suited to describe the concept, but is less suitable for open communication towards residents, partly because it isn't personal enough for a neighbourhood/community, but also because it is too complex. Each of the cVPP proposals should include a new name that fits the values and needs of their community.

Technical aspects

The entries will map the types of technologies that are present within their cVPP design. Are they including storage? How much energy generating are they including? How many people can use it? What are the estimated costs?

Role in the market

According to the USEF framework, cVPP’s can take different roles within the energy market. The communities are asked to provide a section on the ‘starting role’ and their preferred ‘final role’ within the energy market.

MoRe model & Transnational design

Most of these subjects are part of the MoRe model and are the result of the cVPP project research so far. Each of the groups will have to work with ‘community logic’ as described by Luc, with the roles and organisation of the community, with the context of the Netherlands, and with the technical challenges that the implementing partners are experiencing. The competition will therefore gather very valuable data for feedback on the MoRe model and Transnational Design.

Furthermore, the Energy consultants are collaborating with Work Package MoRe in order to help testing the MoRe model. The experience, working with communities, will also be very valuable as input for the MoRe model.

2.3. SPECIFIC APPROACHES

All residents of Apeldoorn will be allowed to join the cVPP competition, but due to our earlier commitment and meetings in the three neighbourhoods first ideas have already been proposed. These options may, or may not, join in the competition.

Realising a cVPP requires sufficient energy generation and residents that consume the energy. It therefore feels natural to 'start' the cVPP by first focussing on energy generation and other useful additions like storage, batteries and electric vehicles, that can be combined within the cVPP. Within each of the neighbourhoods, the focus will first be on identifying projects that, in the long term, will be
beneficial for the cVPP. This way residents can be involved with energy before diving in to the cVPP concept.

This section will describe two of the ‘potential cases’ in higher detail. These area’ have also been described in earlier deliverables and a lot of background data is available on these neighbourhoods.

2.3.1. Zwitsal area

At the edge of the neighbourhood ‘De Parken’, the ‘zwitsal area’. This old industrial area is inhibited by local SME’s and the area is used for innovating projects related to energy. The CEC’s from Kerschoten and De Parken have together identified this area as a possible catalyst. They have written a plan (in Dutch) for this area. Highlights of the document will be shown here.

Plan

This cVPP will focus on generating as much local energy as possible, store it and use it. The business model for the community is aimed at providing as much energy as possible to each other, rather than the grid. This is due to a large price difference for taking energy from the grid (21 cent / kWh) and to return energy to the grid (5 cent / kWh). Researching the option for sustainable energy generation at Zwitsal and experimenting with storage and batteries could be included. Residents and entrepreneurs at the zwitsal are already interested and would like to participate. These actions could form the start/basis of the cVPP and a cooperation between entrepreeneurs and residents of the neighbourhoods Kerschoten and De Maten.

Possible partners for a cVPP in Kerschoten are:

- residents with, and without, solar panels
- schools in de neighbourhood
- soccer club Robur et Velocitas
- cooperation Zon op K&N
- stichting Mobuur
- wijkcentrum De Groene Hoven
- initiative at the Zwitsal area:
  - area 055,
  - cleantech,
  - municipality Apeldoorn,
  - hanzenet,
  - liander
  - entrepreneurs at zwitsal
- local energy cooperation deA
- mall ‘Mercatorplein’
- shops near ‘Koninginnelaan’
- neighbourhood council De Parken
- neighbourhood council Kerschoten
2.3.2. De Maten

Times have changed and we all have to live more energy neutral. Solar panels, windmills, electric cars and electric charging stations are become more accepted within our street scenery. But these solutions are mostly individual and the surplus of energy generation is 'lost' to the grid. How can we socialise this trend and make it more effective? Can we, for example, generate our own energy cleaner, cheaper and more independent? With a cVPP-project we are working on a possible solution. We will test an innovation to start up new neighbourhood energy projects.

Around 26,000 residents and 11,000 buildings are present in the district 'de Maten'. The district is built up of 7 neighbourhoods (de Hoeken, de Horsten, de Dreven, de Velden, de Gaarden, de Donken en de Zonnehove). A central park and shopping mall is situated in the center of the district. Around 40% of the buildings are rental property, with 5 housing associations active in the area.

Scenarios

Several scenarios are possible for a cVPP in de Maten, all different in size. Throughout all scenarios, sustainable mobility needs to be involved in the plan, e.g. public transport, shared cars, electric charging. See below for the three scenarios:

Scenario 1:

All residents in de Maten contribute to the purchase of a windmill (or more), so that all generated electricity from the windmill will be shared amongst the residents. This would be a large step towards an energy neutral district.

Scenario 2:

Several schools and companies in the neighbourhood are placing solar panels on their roofs and residents are partly using that energy. A energy cooperation and cVPP could be built around this idea.

Scenario 3:

On a smaller scale, 1 street or part of a neighbourhood may want to work with generation and storage. A neighbourhood battery would share the energy amongst the participants. The energy won't be put back on the grid.

Currently, it has been difficult to find residents that are willing to be key players and think along with the concept. Therefore we would like to start with several possible partners (see below). A active group of participants will be created from there. Scenario three is currently expected to be the most likely. Hopefully, several participants from de Maten will join the competition and kick-start the cVPP project in de Maten.
Possible partners for a cVPP in de Maten are:

- Residents
- Companies or shops (located in a mall or near the edges of de Maten)
- Schools (1 elementary school and two high schools)
- Local energy cooperation DeA
- Sports clubs
- Neighbourhood and district councils
- ‘Energieke Maten’

3. **COMMUNITY SPECIFIC ACTION PLAN KAMP C**

3.1. **INTRODUCTION**

Kamp C, Center for Sustainability and Innovation, has been looking for energy-conscious citizens’ initiatives in the province of Antwerp that want to produce their own energy and thus become less dependent on fossil fuels. We face a huge challenge today. The renewable energy share should almost double by 2020. Solar energy will make an important contribution to the realization of this objective. Generating renewable energy via solar panels is, after all, one of the most cost-efficient technologies at the moment, and also needs less and less financial support. Numerous families, organizations and entrepreneurs have invested in solar panels in recent years. For larger projects, participation is the key to realizing renewable energy, by generating, using and sharing energy together. But how does one go about doing this? Generating renewable energy together with your neighbors, school, association, municipality and then storing and sharing it?

Throughout period 2 (2018), Kamp C met with a large number of stakeholders, such as municipalities, communities, energy cooperatives and citizens’ initiatives about the cVPP (community-based Virtual Power Plant) project with the aim to: “Generate, use and manage renewable energy together as a community”. (see del. 3.1.1) Kamp C realised that there was a lot of interest within the Province of Antwerp in what communities can do as consumers/prosumers, but many questions remained without answers. They showed interest, but indicated that there is a need for inspiration, knowledge, before can be engaged as a community. For this reason, the communities reached were not ready to engage themselves towards creating a cVPP.

Throughout section 3, Kamp C will highlight the working process that reflects its ‘Specific Action Plan’ cumulating in the organisation of an inspirational trajectory, the: DREAM - DARE – DO days | Strong together for the energy transition.
3.2. **GENERAL APPROACH**

### 3.2.1. Initial steps towards a specific action plan

In order to achieve a safe support system, Kamp C decided to take a step back and think out of the box. An analysis of the important expert and interest groups was made first:

The next step was to create a working scheme that represents Kamp C's generic action plan.

The following diagram shows how a fruitful cross-pollination could be achieved between (emerging) communities, the cVPP project partners and the local (Belgian) experts group, in order to reach 3 Replicating Community-based Virtual Power Plants.
**Analyse** “Where/Who are the communities?

1. **cVPP Interreg:**
   - Exchange of knowledge: What is a community?

   **1. Stakeholders / expert meetings:**
   - general public
   - local authorities
   - interest groups
   - local authorities
   - local energy cooperatives
   - citizens’ cooperatives
   - citizens’ initiatives

   **1. Expert group**

**X - PROCESS → C** community-building process

2. **cVPP Interreg | Exchange of knowledge:**
   - How to form a Community?
   - Coaching process
   - MoRe model | DuneWorks ...

   **Starting up an Expert group:**
   - Coaching process
   - Technical experts | cVPP

2. **Expert group**

**Experts :**
- How to form a C = community
- How to form a VPP = virtual power plant

**Traject X: Start the process**

To inform the communities, exchange knowledge, find experts, the first steps to prepare the community: Invite existing communities, interest groups,… collected in step 1.
Lecture series and workshops:
Spring 2019: 3 readings/workshops and an excursion:

With input from the experts: 2 cVPP Interreg and 2 Expert group

Goal: To involve the citizens and communities, who are interested in cVPP and to inform and inspire them. So that in June Kamp C would have three communities successfully engaged with the aim to create a roadmap for setting up a cVPP.

Themes:
- What is a cVPP? (in layman’s terms)
- Why a cVPP? How about the legislation and policy?
- How a community has to been formed?
- Who are the experts in the community and in the field?

Community Specific Action Plan
- Process design and process coaching
- MoRe model
- Investments and the knowledge ‘traject “How to form a community” before investments → building a community

Y– PROCESS – exchange

Exchange of knowledge between:
cVPP Interreg + Expert group + communities.

→ Three communities will be chosen.

Z– PROCESS C → CVPP

Autumn 2019 : from community to cVPP | coaching process

Goal: Trajectory to cVPP: custom made for the community.
Start-up with 3 communities:
- the process coaching.
- custom made trajectory to cVPP

Trajectory: coaching process “gewoontebreker”, “Betergem 2038” ...
3. **cVPP Interreg | Exchange of knowledge:**
   - Trajectory custom made for this community?
   - Coaching process
   - MoRe model | Dune works...

3. **Expert group | Experts:**
   - Trajectory | How to form a VPP = virtual power plant custom made for this community

### Spring 2020: Long term effects | process X, Y and Z

- Manual “to create a Community based virtual power plant”, in BE, NL and IRE.

#### 3.2.2. Designing the DREAM – DARE – DO trajectory

The X and Y processes outlined in the previous section, took the form of an organised trajectory of inspiration days, the: ‘DREAM - DARE – DO days | Strong together for the energy transition’.

During a series of inspiration days Kamp C brought the expertise of renewable energy closer to the citizen, letting experts speak, showing good examples, visiting inspiring realised projects... The series provided insight into common concerns, a step-by-step plan and some inspiring examples, an overview of the most used options to get started with (financial) participation, but also going one step further, towards a cVPP, by learning how to organise ourselves as a municipality, cohousing group, a neighbourhood, a citizens' initiative and generating, using, storing and distributing our own energy amongst ourselves.

Through this trajectory, Kamp C aimed to give a large number of communities that are at different stages of development in the Province of Antwerp, the opportunity to dream, think out-of-the-box and shape their own energy story.
The general objective of the 3D-days was, therefore, to support the formation of potential energy communities through an interaction of process-oriented skills (via co-creation, workshops ...) and substantive input (lectures, practical examples,...). The inspiration/participation process became a learning and doing tool for communities that wish to take a clear step towards engagement.

Kamp C laid a foundation by bundling the research and practical experience within the cVPP partnership and our broad network in function of this process. The cVPP project partners (e.g. the TU/e, DuneWorks, EnerGent, Qirion, etc...) have also offered support not only by giving lectures, but also by making their own guidance resources available. As this trajectory was a substantial undertaking, Kamp C engaged the help of an external participation expert Trizone, to offer support and supervision to the process and give Kamp C's efforts a greater chance of success.

The DREAM – DARE – DO stages

The following table lays out the stages of the 3D trajectory and the central goals Kamp C wants to achieve with them.

<table>
<thead>
<tr>
<th>DREAM</th>
<th>Inform &amp; inspire</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>with the aim to help the participating communities in clarify their questions</td>
</tr>
<tr>
<td></td>
<td>Tuesday evening 12th March 2019</td>
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<table>
<thead>
<tr>
<th>DARE</th>
<th>Inform, inspire &amp; activate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>the questions of the communities are addressed by the experts</td>
</tr>
<tr>
<td></td>
<td>Tuesday evening 23rd April 2019</td>
</tr>
<tr>
<td></td>
<td>an inspirational trip to the Sint-Amandsberg neighbourhood cVPP guided by our PP EnerGent and to the Co-housing Kerselaar to exchange inspiration between the implementation and potential replication communities.</td>
</tr>
<tr>
<td></td>
<td>Saturday 25th May 2019</td>
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<tr>
<td></td>
<td>an Open Call announced to communities</td>
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<td></td>
<td>Deadline: 16th September 2019</td>
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</table>

| DO | Engage & Design |
The DREAM – DARE – DO days target groups

During Kamp C’s broad scanning of the Province of Antwerp’s for replicating communities, it became clear that there were very diverse types of potential interested parties: cohousing groups, established and emerging energy co-operations, citizens’ initiatives, schools, companies, a wide range of administrative and government bodies (from mayors to sustainability civil servants), as well as motivated but isolated civilians. Kamp C decided to form the programme of the 3D days in such a way, that all these groups would get the chance to be informed, inspired and activated to take their role in the energy transition. The thematic areas representing the target groups and followed across the trajectory were:

- Energy Cooperatives
- Cohousing groups
- Local government
- Citizens' initiatives
- Companies (to a lesser degree)

Communication strategy

A comprehensive communication strategy was designed in order to reach as many potential cvPP communities as possible, through targeted mails to stakeholders, twitter and facebook posts and with the 3D days inclusion on the centralised channel of the Province of Antwerp. The following posters were also designed by Kamp C as communication tools and to gather interest in the trajectory.
Community-based Virtual Power Plant, NWE 588

Samen sterker voor energietransitie

Community-based Virtual Power Plant, NWE 588

De nietrasag op donderdag 19 maart of vrijdag 20 maart.
3.3. **SPECIFIC APPROACHES**

### 3.3.1. Potential Province of Antwerp communities

The information gathered throughout period 2 - 2018 (see del. 3.1.1) resulted in a number of communities coming to the foreground as potential participants in the Dream - Dare - Do days trajectory. Kamp C was therefore eager to engage them in the process.

- **Co-housing Ekelen, in Herentals**
  Optimising present and future investment to gradually become self-sufficient
- **Social Housing Corporation Zonnige Kempen (with at least 1 project)**
  many RES steps already made | wants to become self-sufficient and involve the tenants
- **Municipality of Nijlen**
  Seeking collaboration with Zonnewind energy cooperative
- **Municipality Lint (1 new development and 1 neighbourhood renovation)**
  Seeking to become 0 energy municipality
- **ZuidtrAnt energy cooperation**
  Looking for new ways to assist citizens energy communities and municipalities before they can become independent
- **Klimaan energy cooperation**
  vision & future of a starting energy cooperation
- **2 neighbours with excess production (Mol-Balen)**
  Seeking advice and cooperation with other citizens with support from the municipality
- **Apartment block (Ecoob)**
  Seeking best practises in order to become an energy cooperation
- **Provincial Technical School PTS (Boom)**
  Technical team & students want to optimise energy production and involve neighbourhood
- **Citizens’ initiative (Antwerp)**
  Engaged neighbours without capital want to start a citizens’ energy initiative
- **Neighbourhood renovation initiative (Kontich)**
  Rhedcoop project
- **Social Housing Corporation Woonhaven (Antwerp)**
  Renovation of big apartment blocks and incorporation of salt-batteries & warmth networks
- **Municipalities of Westerlo | Sint-Katelijn Waver | Mol-Balen ....**
  Seeking platform to reach and involve more citizens
- **a cVPP in Kamp C**
  Involving on-site and neighboring companies in a cVPP (outside competition)

In this following section, Kamp C will present three representative examples of the diverse types of participating communities, their profile, dreams and cVPP intentions.
3.3.2. Cohousing Ekelen, in Herentals

Background

This cohousing group chose their project in Herentals, because of the easy accessibility by public transport (train). After all, Herentals is located on a railway junction, with trains to Antwerp, Brussels, Turnhout, Zuiderkempen and North Limburg. The Ekelstraat is located just north-west of the center of Herentals, less than fifteen minutes by bike from the station. In addition, the Herentals-Lier and Herentals-Balen bicycle railways (partly still in the design phase) are nearby.

Cohousing Ekelen, in Herentals, is currently in the start-up phase, a de facto association. For the realization of their project they entered into a partnership with Wooncoop. Wooncoop is a housing cooperative that proposes a new way of living. The cooperative rents out homes, and all residents are shareholders of wooncoop and therefore co-owner of the cooperative. In this way, every residential buyer lives as it were renting from himself and the bond between tenant and owner changes. “With Wooncoop you rent your own living space and share common space. If you want, you can live with us for life. We work socially, sustainably and cost-effectively. We manage and maintain your home with special care for quality and sustainable living.” Transparency and participation are paramount, as is a sustainable and social outlook on housing.

Dream & Focus

- 25 properties, max. 4 storeys high | compact built, room left
- Max energy independence
- Geothermal + PV panels in group, enough for own use and surplus for the neighbourhood.

Action Plan

By taking part in the Dream – Dare – Do trajectory's workshops, founding members of the Cohousing Ekelen will try to frame the focus of the group, clarify their energy related questions and formulate the first steps needed to be made in their road map.
3.3.3. Social-Housing Cooperative | Zonnige Kempen

Background

With this project Zonnige Kempen participated in the revaluation of the center of the Zoerle Parwijs district. Due to high traffic pressure from through traffic, decay and vacancy, the center was no longer livable for years. When the municipality of Westerlo planned to tackle the traffic problem, Zonnige Kempen seized the opportunity to sit down together about the idea of an infringement-oriented housing project in the center. With this project, a piece of village-center renewal came to the fore, with a great deal of attention being paid to new public space.

At the site of a few decayed buildings, a diversity of new homes was grouped in three blocks around a public square. The project uses a thorough energy concept:

- Limiting energy consumption (e.g. by insulating)
- Addressing renewable energy sources (e.g. heat from soil, sun)
- Making optimum use of available energy sources (e.g. high-efficiency gas-fired boiler)
- Measuring and monitoring consumption
- Providing customized information to users
- Communicating results

Dream & Focus

All kinds of innovative techniques were applied in the project: solar collectors, photovoltaic solar panels, closed ventilation system, heat pump, asphalt collector, etc. The aim is to optimize the synergies between these different technologies. How does one organize "sharing energy" in a social residential area / social house cooperative?

Action Plan

By taking part in the Dream – Dare – Do trajectory's workshops, members of the social housing cooperative Zonnige Kempen will try to frame the focus, clarify their energy related questions and formulate the first steps needed to be made in their road map.
3.3.4. The Municipality of Nijlen

Background

The Kempen 2020 Energy and Climate Action Plan of Nijlen is part of the Mayor Covenant and provides an overview of the actions that the municipality is planning in the coming years to achieve the 20% reduction in CO2 emissions by 2020. It is a dynamic plan that can change over the years due to changing circumstances or new opportunities.

To be able to formulate objectives for CO2 reduction and the effects of the climate policy, insight is needed into the size and sources of the current CO2 emissions on the territory of the municipality. There is one for that municipal emission inventory. The emission inventory indicates for each sector its share in the total CO2 emissions. The reference year used is 2011. The inventory was performed using the generic tool that VITO was commissioned by the Department of Environment, Nature and Energy of the Flemish government, supplemented with municipality-specific data.

The emission inventory shows that in 2011 62,765 tons of CO2 were produced emitted.

![Sectoral CO2 emissions in Nijlen (2011)](image)

fig.: Share of sectors in total CO2 emissions (excluding ETS companies) for territory of Nijlen (2011)
The zero emissions are not taken into account in this baseline measurement motorways. The emissions from animal husbandry are also not included. The homes are responsible for 58% of municipal CO2 emissions. The tertiary sector (offices, businesses, catering, healthcare ...) and the others industry each account for around 8% of CO2 emissions. 21% due to road traffic. Of the total emissions is public transport responsible for 1%. The public lighting and the operation of the municipal services each represent a few percentages. If we compare the municipality with an average Kempian municipality then the large share of households in CO2 emissions in Nijlen is striking. The explanation for this can be found in the smaller impact of other sectors the municipality, than the fact that households in Nijlen emit more CO2.

Dream & Focus

The Municipality Nijlen wants to tackle the CO2 emissions from households and is seeking ideas to help them become a self-sufficient municipality in terms of energy. They want support in their quest towards energy transition through positive projects. As owner of the network, paying Fluvius for its management, they want to clarify the role they can play as municipality in order to stimulate transition.

Action Plan

By taking part in the Dream – Dare – Do trajectory's workshops, civil servants from the Municipality of Nijlen will try to frame the focus, clarify their energy related questions and formulate the first steps needed to be made in their road map.

3.3.5. Competition – Open Call

At the end of the Dare stage of the Dream-Dare-Do days, Kamp C will launch an Open Call, offering participating communities the chance to win a workshop and a starting amount of €2000. The participants of the Dream and Dare days, as well as other initiatives will be asked to submit their own idea about what their community can do in the energy transition. The deadline for this Open Call is September 16, 2019. Throughout the summer, they will have the chance to ask Kamp C questions and assistance. At the end of September 2019, the cVPP project partners will assess the submissions and will choose 3 winning communities. A press event, reception and presentation by the winning initiatives will take place on Thursday, November 14, 2019 during the 5th partnership meeting of the cVPP project.

The trajectory, however, does not end with the 3 winning communities. Kamp C intents also to engage the remaining communities and starting initiatives by involving them to the Long Term Effects stage of the cVPP project and assisting them in becoming replicating communities in the future.
4. **COMMUNITY SPECIFIC ACTION PLAN CRES/TEA**

4.1. **INTRODUCTION**

CRES or Community Power has selected five different energy communities for cVPP. These neighbourhoods have relatively high levels of activity on renewable energy and the energy transition as a whole. In order to engage with these communities, monthly meetings take place.

Over the last months, several insights have been gathered by meetings with the cVPP project members and meetings with the CEC's.

CRES/Community Power

This document aims to describe the community specific action plan for each of the five neighbourhoods. Within each of the neighbourhoods, the action plan is supposed to lead to:

- Increased awareness & knowledge of the cVPP concept & project
- Identifying the communities’ values & priorities
- Increased awareness of CRES/Community Power our supply company
- Customer sign up

A general approach will be used for each of the three communities in order to achieve this.

Below is the general approach taken with all communities:

4.2. **GENERAL APPROACH**

4.2.1. **Key Contact**

Each of the five communities have an established committee and with key contacts who lead the others. These energy pioneers attend monthly meetings, employ staff to work on the cVPP project, and are essentially partners in the project.

The next phase of the project will ask these key contacts in their communities to target their stakeholders and have them sign up to Community Power.

Community meetings
These meetings take place monthly where all engaged stakeholders come together

### 4.2.2. Competition

Solar Schools competition.

- Advertised to schools in vicinity of Interegg Sub-partner energy co-ops.
- Schools invited to come up with idea for a project on the energy transition locally, and make a short video.
- 45 Schools from around Ireland applied.
- 5 winners picked from online vote and independent judging panel.
- Between 4kw - 6kw proposed for each school.
- €1,000 pledged per school. Remaining funding from philanthropic trust and donations.

Project has unearthed many of the difficulties with microgeneration in Ireland. Schools must apply for planning permission for solar panels, and are not eligible for grants from the Sustainable Energy Authority of Ireland.

- We are currently supporting the schools in applying for planning permission.
- Education workshops on solar energy will take place in each school (starting this week 07/05/19).
- Great interest from the public, and media at the announcement of the winners.
- Ongoing interest from other schools interested in how to install solar panels themselves.
- When completed schools will be generators and customers of CRES.

### 4.2.3. General planning

- Monthly Meetings
- Launch of Community Power

### 4.3. Community specific action plans

The name Community Power will be used to describe the 5 communities and CRES as a legal entity. Each will be described below.

#### 4.3.1. Specific approach ECTC

Energy Communities Tipperary Cooperative CLG (ECTC) has been involved with the CRES cVPP project as it aligns with our own community led ethos. Heretofore ECTC was mainly the provider of energy retrofits
to homeowners in our communities. But now ECTC has begun exploring community based energy generation projects of our own and would intend for these to be linked to the cVPP. With this in mind, ECTC plans to make an investment in the cVPP.

Description of the area:

The seeds for ECTC germinated in 2012 when an energy team in Drumbane/Upperchurch ran a household energy retrofit project, leveraging grants from the SEAI. This project expanded to 4 communities in 2014 with the inclusion of Birdhill, Kilcommon/Rearcross and Lorrha/Rathcabbin. ECTC was formed in 2015 with these 4 communities and 4 others that then joined.

ECTC is driven from various community energy teams, who make up our organisation. Each community appoints at least 1 volunteer director to participate on our board. These communities are based primarily in County Tipperary. Currently the communities that make up ECTC are:

- Birdhill
- Cappamore
- Drumbane/Upperchurch
- Kilcommon/Rearcross/Hollyford
- Lorrha/Rathcabbin
- Puckane
- Terryglass

ECTC contracts with a Project Coordinator to run the projects, liaise with homeowners and contractors and also handle all of the paperwork. We also pay North Tipperary Development Company for the services of a Finance Manager in order to manage the financial accounts.

Everyone else involved with ECTC is a volunteer and have other day-to-day commitments, so at a recent strategic planning session, we have decided to look at the feasibility of hiring somebody to help carry out the other operational tasks that fall outside of the remit of the Project Coordinator and Finance Manager.

Participants for a cVPP

Up to now, all of our customers have been homeowners and community groups. We would intend to encourage those to sign-up to the cVPP.

We are exploring energy generation through various avenues. We have recently completed a feasibility study on a micro-hydro solution in Drumbane/Upperchurch. We are also planning to run a pilot project for solar PV on some dairy farms in our communities.

What does the cVPP look like?

What does the community virtual power plant look like in your community?

We would hope to make the cVPP the energy provider of choice in the homes and businesses in our respective communities.
Action Plan

We would highlight our partnership with the cVPP to our customers and recommend that they sign up. Where we work with a business on energy generation (e.g. a Dairy Farm), we would encourage the owner to sell what they generate to the cVPP.

Meetings

ECTC's board meet on a monthly basis and each community runs their own local meetings. When these are scheduled, we would be happy to invite somebody from the cVPP to talk with householders and businesses.

4.3.2. Specific approach Tait House

The cVPP project resonates with both our business ethos and our existing social & community enterprises. The economic development model underpinning the cVPP buttresses the circular economy and as such is of particular relevance to us as we strive to develop sustainable enterprises in our communities. Our existing energy retrofit business provides us with an ideal platform from which to launch the cVPP (energy generation & supply project) in our community.

Description of the area

We are a long established cluster of community and social enterprises, employing over one hundred people. Setup in 1984, we have strong ties with the municipal authority (Limerick City & County Council - LCCC) and indeed various government agencies.

On the community side, we deliver services on behalf of the Local Authority (LCCC) to our community and consequently have deep connections throughout our community and across the city & county.

On the social enterprise side, our enterprises strive to generate a surplus for redistribution in our community – to further stimulate sustainable job creation, together with education & training in the social enterprise economic development model.

Some of our enterprises include the following
• Energy conservation retrofitting of buildings, regular & deep retrofitting in the residential & commercial sectors, certified by the SEAI (Sustainable Energy Authority of Ireland - SEAI.ie).
• Steel fabrication
• Education & training outreach programs, at school and community level
• Community Creche
• Community Café
• Urban farm & garden

Participants for a cVPP

Targeted customer segments for sale of electricity include the following

• Residential
• Community
• Commercial
• Industrial
• Agricultural
• Municipal

On the generation of electricity, via community solar farms etc, the ownership will be weighted in favour of community groups and individuals on the basis of one member one vote. High net worth individuals and bodies corporate will be encouraged to invest, at a fixed rate of return and for a fixed time period, to obviate the need for bank finance when constructing power generating facilities.

What does the cVPP look like?

• A vehicle through which ordinary members of the community can have
• shared ownership of power generation facilities
• shared ownership of the power resale company
• Fair and transparent energy prices
• A revenue stream for their community, commensurate with the power generated & consumed in the community.
• A platform for the promulgation of the cVPP model throughout the country
• A platform for the promulgation of the economic development model which underpins the cVPP

Action Plan

With the other Irish members (of cVPP)
• setup the new company with an appropriate legal framework
• develop a model for the promotion of the cVPP nationwide

Locally, sign up customer/members

• for the energy supply side of the business
• for the energy generation side of the business

We will leverage off our existing businesses, particularly the energy retrofit business, to sign up new customer/members for the cVPP. We will piggy back on our existing promotional campaigns (social media & conventional media) to encourage signup at community, commercial and municipal level. We will co-ordinate and train our community engagement team to plan a schedule and target specific sectors across Broad groups and Communities such as Residents associations, Community Centres, Crèches, Councillors at Sector group meetings. We have access to significant on line presence engaged with over 40,000 follows here to fore untapped including our own social media platforms.

The existing enterprises in the Tait House group are transferring to the cVPP for their energy supply. We will leverage from here to other enterprises across the city and county.

Meetings

We have held meetings to bring the cVPP project to the attention of the Local Authority and thereby highlight the community and municipal benefit. The CEO has presented in chambers to the LCCC directors and councillors.

The second half of 2019 will see the rollout of a customer/member acquisition program to deliver 1,000 new members for the energy supply business from our city & county by Q2 2020. It is our expectation that many of these members will also become members of the energy generation business.

4.3.3. Specific approach SMART Power

Smart M Power (MPOWER) is an Energy Community Utility tasked with empowering Communities to become full and fruitful participants, and leaders, in the Energy Transition to a Zero Carbon Energy Economy, making full use of the most advanced Digital Technologies, to generate and store power while providing flexibility and other Electricity grid Support Services. Smart M Power is a leading member of the larger Irish Energy Research Compact MEGA (Micro Electricity Generation Association). MPOWER, as a member of the Community Power, is also developing a Disturbance Neutral Energy Community in Glenasmole (Co. Dublin - www.tallaghtsmartgrid.com) and a Test Bed, for Disturbance Neutral VPP Communities, in Tullamore, County Offlay.

Description of the area of involvement:
The Community are focused on the Research, Testing and Deployment of Disturbance Neutral VPP Communities. In Tullamore a Cluster of 5 are fully engaged including Charleville Castle.

Participation in the cVPP:

MPOWER – Community Power provide the platform for SMART M Power (Sub-Partner) to test emerging Demand response/ system security equipment and CVPP infrastructure.

Smart M Power (MPOWER) is responsible for implementation of DSM-trials for the cVPP.

Action Plan

Smart M Power (MPOWER) is leading the development of a cVPP infrastructure analysis to ascertain the requirements of a DisturbanceNeutral cVPP for supplying System stability services to the DSO & TSO. Proof of Concept of DSM services has been completed and development continues.

Smart M Power (MPOWER) is developing novel methods of community local Demand Response (Flexibility Services to enable Renewable Energy Balancing within a Community Area). The development of these as a smart micro grid to date needs the inclusion of a community energy supplier so that the business case for the additional software and control can be realised through the demand response and system services market. This will be provided by testing on a small number of buildings for smart demand response and linking this to the electricity market via the CVPP.

Meetings

MPOWER meets weekly and is otherwise fulltime involved in the development and deployment of Disturbance Neutral VPP Energy Communities.

4.3.4. Specific approach Aran Islands

Comharchumann Fuinnimh Oileáin Árann Teo (CFOAT) is an Irish sub-partner in the cVPP project. We intend to generate our own locally owned renewable electricity supply through micro-generation (small scale PV) and through a community owned wind turbine on the Aran Islands. We believe that the best and most suitable way to distribute our power will be through a cVPP

Description of the area

CFOAT itself is a non-profit co-operative, representing the residents of all three Aran Islands (approx 1,300) and membership is only open to those with an address on one of the islands. No shareholder will receive a dividend on their share, and all profits will be re-invested in the local community. Our main objective is to make the Aran Islands Carbon Neutral and self-sufficient in terms of energy by 2022. To
achieve this we have focused on the retrofitting of existing buildings on the islands and the electrification of transport and heat there too. Our next step on our path to self-sufficiency is to focus on the generation of clean, renewable electricity.

Participants for a cVPP

The main industry on the islands is tourism, therefore, we have a high number of pubs, restaurants, cafés, and B&Bs on the islands considering our year round population. We also have a hotel, glamping village, supermarket as well as numerous craft shops, a goat farm and cheese making facility, and two seaweed processing facilities. These will be the main target in the commercial sector.

What does the cVPP look like?

To CFOAT, a cVPP will be the infrastructure through which we can own and sell our own locally generated power to each other while at the same time benefitting our small community. The very fact that it is community owned means it will be transparent, with fair, consistent and clear pricing and no unethical marketing strategy designed to lure in customers.

Action Plan

In our community we hope to recruit residents and businesses of the islands as customers of our cVPP. Work on this has already begun. We will start by targeting our own shareholders, many of whom are local businesspeople, and then move out further in to our community by engaging and promoting the cVPP to the residents of all three islands. We will also promote cVPP at all of our public meetings and events.

Meetings

CFOAT regularly hosts public meetings, the latest of which was a workshop co-hosted with the Clean Energy for EU Islands Secretariat on June 24th and 25th. We used this 2 day event to proudly display cVPP marketing material, as well as explain clearly to the audience the ethos and objectives of the cVPP. We will continue to promote the cVPP at all our functions, as well as within the local businesses network.

4.3.5. Specific approach Claremorris

Claremorris and Western District Energy Co-operative are participants of the cVPP Interreg project. The voluntary organisation are focused on empowering communities within the West of Ireland to generate and commercially sell back renewable generated electricity to its members, while using any generated revenues to create employment and further invest in renewable energy application.

Description of the area:
The Claremorris and Western District Energy Co-Operative was founded to develop the benefits of community owned renewable energy, supporting communities and addressing climate change in the West of Ireland. With over 50 members, the Co-op are currently engaged on a voluntary basis to support communities in the transition to the low carbon economy.

Participants for a cVPP

Through the support of the local groups and the co-operation of local businesses, the energy co-operative has gained valuable experience in the development of a local energy deployment. Groups/Businesses involved include:

1. Local Council
2. Local retail organisations
3. Local voluntary groups
4. Members of Claremorris general public

What does the cVPP look like:

The overall project will encapsulate a centralised solar farm connecting to the local electricity grid. The cVPP through Community Power will then sell renewable generated power to local businesses/individuals, competing with existing electricity providers. However the involvement of each customer will bring the additional benefits of cooperative membership with a voice on how the co-op operates. Based on this capability, the cVPP will then look at the sale of renewable heat to businesses within the town and integrate the sale of both cVPP(electricity & heat)

Action Plan:

The proposed project is developed to give a cost-effective solution allowing the Co-Operative to initially illustrate the benefits of renewable energy with the town of Claremorris through:

1. The Co-Op 3D project which is updated on a daily basis, changing the colour of each building to Green (as users begin to use renewable energies) from a Grey starting point. The greener, the more energy efficient the town becomes. Finally, the community can then visualize the impact of such changes on a real-time basis. With the introduction of smart meters, the system becomes a live interactive monitor and illustrative tool
2. The commissioning of a 5MWe solar farm within the town, providing a source of community owned green power

3. The establishment of a supply chain capability to sell renewable power to end customers, providing a commercial transaction capability. This will also generate active employment within the co-op for the long term growth of the cVPP. Actions will include:
   a. Open evenings to promote the benefits of community generated power generation
   b. Reaching out to individual customers promoting the benefits of cVPP
   c. Engaging with local businesses on the commercial benefits of “shopping local”
5. CONCLUSION

GA

Gemeente Apeldoorn has attempted to form ‘key groups’ and start the initiative within the
neighbourhoods. However, this is been unsuccessful so far. In order to ‘seduce’ communities to work with
the cVPP concept, a trajectory of the competition and workshops will be launched in October 2019. The
trajectory will guide participants (communities) throughout writing a cVPP design. The trajectory will be
open to all of Apeldoorn (Loenen excluded), rather than just the three neighbourhoods previously
investigated.

Kamp C

After a very challenging start as replicating partner in the starting territory of the Province of Antwerp,
Kamp C has managed to motivate a large and diverse range of initiatives and organisations to become
potential cVPP communities by taking part in its informative and inspirational Dream – Dare – Do days
trajectory. Kamp C will thus offer the cVPP partnership valuable insights into the workings of a starting
territory.

CRES/TEA

All communities are at the stage in their action plan where they are ready to promote Community
Power/CRES as a supply company. Their main focus is to establish the legal entity, sign up clients and
encourage clients to sell back to Community Power/CRES.