

Format: *Description of Case Study (concept 7 juli 2015)*

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| <b>General information</b>   |   |
| Title  | BUURTzoektWARMTE; sustainable <b>DECENTRAL (off-grid)</b> solutions   |
| Name of responsible person/ coordinator                                  | Dr. Anne Stijkel; <a href="mailto:anne.stijkel@inclusivescience.org">anne.stijkel@inclusivescience.org</a>  |
| Organisation of responsible person                                       | International Institute for Inclusive Science (Stichting Triple I-S)  |
| Problem description  | <p>In the neighbourhood Maldenhof in Amsterdam South-East/Gaasperdam since a few years an active core-group of neighbours (mainly middle-class house owners) co-operate in searching and sharing SMART solutions to live as sustainable as possible. Their houses were built in the early eighties, with an energy label originally around C/D. Many of them already reduced their electricity needs by LED and A++ and generate their own electricity by solar panels. For their heating needs (space heating and hot water for kitchen and shower) and for cooking, some neighbours realised reduction in their gas use by (floor-) isolation, double or triple glass, solar water heater and/or by induction cooking. Moreover, many of them started to energise as 'sustainability ambassadors' their next circle of influence (neighbours with rent houses and with lower socio-economic status with affordable measures, including behavioural change), in order to help them to lower their energy bills.</p> <p>However, the needs for gas in this neighbourhood are still high and the problems in Groningen with gas exploitation as well as geopolitical problems concerned with gas from Russia as an alternative for the Dutch gas are urgent for the core-group. This common felt 'Sense of Urgency' was the motor for common search for sustainable solutions - for themselves, as well as for their whole region - that make the difference. During their exploration for an Energy Cooperation for e.g. collective wood pellets stoves in own management, they found networkprovider Alliander on their way. Since 9 months they explore together whether investing into a new heating network (for 30 years) could a good solution for 100+ households (and even for the whole region of 10.000 households), or not. After the pro's and con's of wood pellet and geothermy, waste heat seemed for the short term economically the best option, with as 'Source' the hospital AMC nearby that has much waste heat from its own power plant. The first steps are being made in this direction, with new neighbours and new Partners like AMC, ASC, NUON, VandeBron and Waternet.</p> <p>At this moment, societal controversies about energy transition strategies and expected revision of the energy legislation and taxes hinder to know from the citizens perspective what's the best strategy for long-term sustainable heating solutions, in terms of sustainability, community and price: (1) decentral solutions, everyone on his own, or (partly) together as neighbours, or (2) central solutions, together as neighbours AND bigger Partner's like the networkprovider Alliander, the waste heat provider AMC, and/or energy providers like NUON or VandeBron, or (3) a combination of (semi-)central and decentral solutions. At this moment the risk of 'lock-in' with central solutions as waste heat, and the wish for 'no-regret' solutions like isolation currently lead to 'standstill'. In the long-term, standstill is a negative outcome for the positive process of energy saving and sustainable generation till now. That's worth to regret; an even more worst-case scenario is that neighbours mutually fall out.</p> |
| Central research question<br>(overall <b>multidisciplinary</b> question) | How can the energy transition and supply - at the level of a neighbourhood - be optimally solved: <b>central and/or decentral</b> , in terms of 3 P (ecol. sustainability, community and costs), seen <b>from the perspective of the</b> (core-group of) <b>neighbours</b> in this <u>specific</u> neighbourhood with their specific history and possibilities, as well as in the <u>whole</u> region of Gaasperdam?  |

| Involved disciplines              |        |   |  |
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| Suitable for students from track: | yes/no | Disciplinary (track-specific) research questions  | Suggestions on research methods and State-of-the-Art literature reviews  |
| A. Energy & Resources             | yes    | <ol style="list-style-type: none"> <li>1. What are expectations about the technical (and financial feasible) possibilities and consequences in the nearby future for transition from decentral (= per house, off-grid) heating by gas (CV) towards decentral 'integral' solutions like isolation, heating by local warmth pumps, solar freezer, IR-panels, wall heating by e.g IR/nanotechnology, as promised in 'Zero on the Meter Concepts' from Urgenda, Energiesprong et al; and as seen in examples from Germany etc?</li> </ol>   | <ul style="list-style-type: none"> <li>• Interviews with experts</li> <li>• Literature analysis</li> <li>• 'State of the art'-case studies from Urgenda and Energiesprong</li> </ul>   |
| B. Global change & Ecosystems     | yes    | <ol style="list-style-type: none"> <li>1. What is the <u>impact</u> for the environment in the next 30 years for 150 households in Maldenhof, and in the future for a potential of 1.000-10.000 households in Gaasperdam, when decentral solutions towards zero to the meter appear to be feasible in financial and organisational terms?</li> <li>2. What is the impact for the environment when intermediate solutions (partly decentral, partly {semi-}central, e.g woodpellet stoves or warmth pumps for 4-6 households) will be applied?</li> </ol>  | <ul style="list-style-type: none"> <li>• Literature analysis</li> <li>• Interviews</li> <li>• Mix of methods of LCA, MKBA and scenario studies</li> </ul>  |
| C. Policy & Management            | yes    | <ol style="list-style-type: none"> <li>1. What are the (expected) developments in energy tax, in potential shifts between electricity tax and gas tax, and what about a warmth tax?</li> <li>2. What is currently, and what could be in the future the role of citizens (passive consumers vs co-producers), in providing their (own and/or common) warmth needs, compared with their roles in individual or common electricity generation?</li> <li>3. Under which conditions would it be wise to advice citizen to invest in their common warmth needs and to commit for 15-30 year? What process- and systems innovations are required?</li> </ol> | <ul style="list-style-type: none"> <li>• Analysis of NBM, in theory</li> <li>• Case studies (the practice): exploration of current waste heat projects in Amsterdam and Nijmegen, and new initiatives in the MRA (Metropole Region Amsterdam), the city Utrecht, Z-H</li> <li>• Interviews with key figures, including groups of (critical) citizens</li> <li>• Interview with national government, e.g. the results and lessons from the Innovation Programma Climate neutral Cities' 2010-2014.</li> </ul> |
| D. International Development      | yes    | <ol style="list-style-type: none"> <li>1. How is the energy pricing (supply, network, tax, bonus-malus for each GJ waste heat) organised in European</li> </ol>   | <ul style="list-style-type: none"> <li>• Interviews with Rescoop Partners (research programme on energy</li> </ul>   |

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|                           | <p>countries, including The Netherlands?</p> <p>2. How is the balance between fixed costs and variable costs in heat supply, and what are the (potential or expected or found) effects of differences in these balance in terms of supply security, as well as in terms of energy use/savings by the consumer?</p> <p>3. What are the expectations concerning harmonisation between the national rules and laws with respect to energy supply and energy generation?</p>  | <p>coops in Europe)</p> <ul style="list-style-type: none"> <li>Literature and web search</li> </ul> |
| <p>Additional remarks</p> | <p>This Transdisciplinary case study project must be seen in the wider context of SLIMwonenGaasperdam (2014-2015; Letter of Intent with big Partners as well as the Citizens representation, in the form of Wij Krijgen Kippen'; see <a href="http://www.wijkrijgenkippen.nl">http://www.wijkrijgenkippen.nl</a>) and Besmettelijke BUURTkracht (citizens in reciprocity since 2012; see <a href="http://www.slimwonengaasperdam.nl">www.slimwonengaasperdam.nl</a>; <a href="https://youtu.be/grw_XhTZS8Q">https://youtu.be/grw_XhTZS8Q</a> BUURTzoektWARMTE in Maldenhof; <a href="https://youtu.be/EDi8u49i1c8">https://youtu.be/EDi8u49i1c8</a> Buurtwarmtenet Maldenhof.</p> <p>The project BUURTzoektWARMTE is honoured in April 2015 with the P-NUTS-price 2015 Best Idea. At the same time - unexpected by us as neighbours in Maldenhof - important policy changes took place: (1) the 'Nationale Warmtevisie' of Minister Kamp was presented, as well as (2) an important Cooperation Agreement was signed by 25 Partners in the Metropole Region Amsterdam to work on a regional heating Network for 400.000 households and industries (230.000 in Amsterdam). Very recently in The Netherlands Urgenda won the Climate lawsuit. In Utrecht, very recently a process has been started in which the municipality and citizen together work on waste heat waste solutions. So, waste heat and its controversies are really HOT!</p> <p><b>The Heat-case has been split into two cases: (1) a route of exploration concerning a <u>central grid solution</u> and its consequences, and (2) a route of exploration concerning a <u>decentral, off-grid solution</u> and its consequences. It is expected that a combination of both would be the most effective in terms of overall sustainability. Therefore, in the last weeks of the project both cases should be integrated into overall-conclusions/advices for Maldenhoffers as well as for all Gaasperdammers !</b></p> |   |