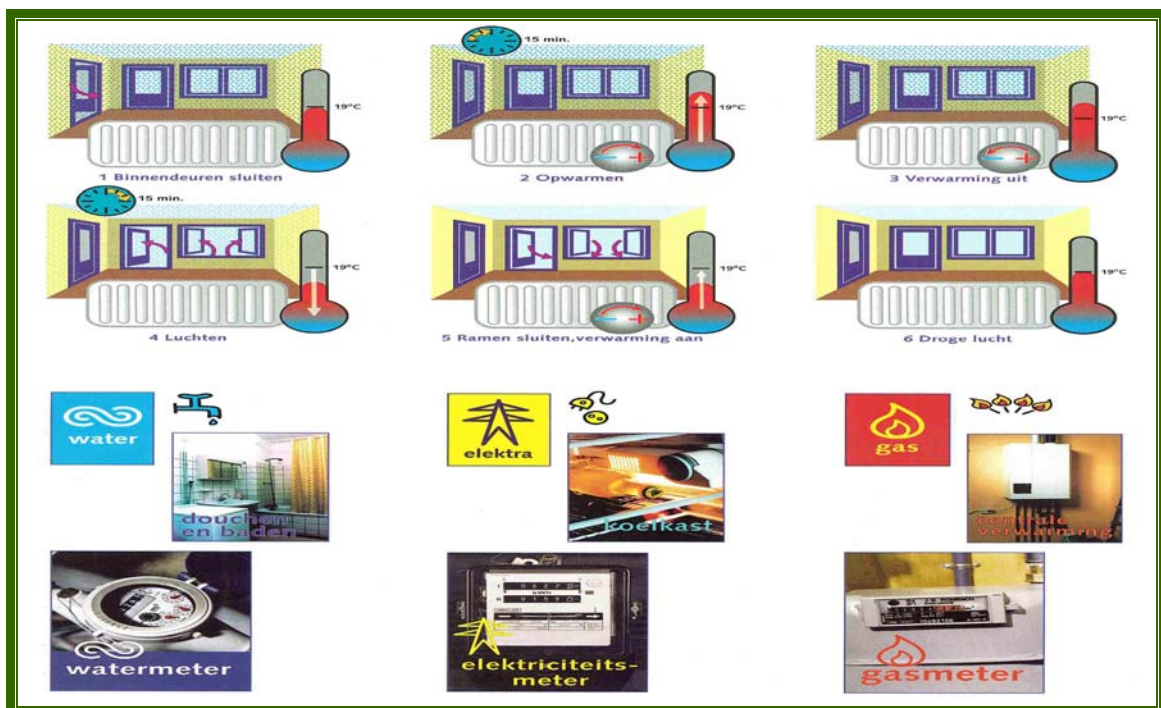


## Case Study 2

# The Green Energy Train project 2001-2003 in Leidsche Rijn

## The Netherlands



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**Energy behavioral changes**



## **Changing Behaviour**



Work package 2

Development of the conceptual model: Analysis of success factors,  
underlying models and methods in target group interaction

### Case Study 2:

## The Green Energy Train project 2001-2003 in Leidsche Rijn, the Netherlands

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## Summary of the case

The Green Energy Train project ran from November 1st 2001 till May 1st 2003 in Leidsche Rijn, a new district of Utrecht municipality, the Netherlands. The target group consisted of tenants of social housing that had moved into newly built houses. The project targeted energy-relevant behaviour at the household level. Around 45 residents (8% of the target group) have been recruited to participate in the main course. In addition, three activities were organised involving 7 or 8 participants each time. SME Consultants, based in Leidsche Rijn, managed and implemented the project, in close cooperation with the municipal Neighbourhood Centre. The initiator of the Green Energy Train Programme, consultancy AardeWerk, developed the method and delivered the educational material. The project was financed for 167,916 Euro by means of a subsidy granted by the Ministry of Economic Affairs and the Ministry of Housing, Spatial Planning and the Environment.

One goal of this project was to accomplish 10% energy saving in households by bringing about lasting behavioural changes among the target groups. This goal has not been reached. Other goals involved the application of the educational method, testing it on its effectiveness, and measuring the impact on participants' behaviour. These goals have been partially achieved.

The project faced several problems right from the start. Collaboration between project team members was difficult. The project manager SME had doubts about the method and underlying philosophy. The people that were locally recruited to become coaches dropped out during the training. Recruitment efforts did not result in the desired numbers of participants. Although the method was intended to be demand driven, the underlying approach remained rather present and was not tailored to the particular target group at all (participants had difficulties with the lack of concreteness).

Conclusions are, first, that in case there are multiple goals, these should be reconcilable and feasible within the scope. Second, collaboration and trust among project team members is crucial. Mutual expectations, new ideas should be communicated throughout the project. Third, method and materials should be suitable for the target group, the particular local setting and for achieving the stated goals.

## Step 1: Context of DSM programme

### *National context in general*

The Netherlands is a relatively small and densely populated country. The total number of inhabitants exceeds 16 million and population density is around 486 persons per km<sup>2</sup> (CBS, 2008). Power and heat supply predominantly come from fossil fuels and natural gas accounts for about half of the total primary energy supply (EIA, 2004). In 2006, renewable energy supply accounted for 2.8% of total domestic primary energy consumption. Domestic net electricity production from renewable energy amounted to 6.5% of the net domestic electricity consumption (CBS, 2007). Wind energy and biomass are the main applications in the field of renewables. The electricity market and a large share of the natural gas market have been liberalized in the course of the nineties. Current Dutch energy policy emphasizes security of supply, a competitive market and environmental protection, whereby the emphasis on security of supply is of recent origin.

Dutch renewable energy policy has been very volatile, thereby undermining the perceived reliability and discouraging entrepreneurs to plan and invest in renewable energy projects (Breukers and Wolsink, 2007). The Netherlands has both demand-side and supply-side measures to promote renewable energy. On the demand side, exemptions for renewable energy from the Energy Tax and investment subsidies for households purchasing renewable equipment have been in place (IEA, 2004). On the supply side, a fiscal support scheme for renewables replaced direct investment subsidies from 1996 onwards. This fiscal support system however, was partly abandoned in 2002 - because it mainly supported biomass (and waste incineration) in old environmentally unsound power stations abroad. It was replaced with a limited feed-in tariff system in 2003, which triggered realization of e.g. wind power schemes. However, after a couple of years the financial ministry judged it to be too costly, and this support system was also abandoned. In 2008, a new arrangement has been adopted to support producers of renewable energy.

Energy efficiency has been encouraged by policy that includes the use of benchmarking covenants and active evaluation and monitoring. The first National Environment Plan from 1989 introduced the concept of target groups of national environmental policy (Weale *et al*, 2003). Instead of enforcing strict regulations, government set voluntary agreements with these target groups. Since 1992, such voluntary long term agreements with target groups - including the energy sector - have been in place. Between 1989 and 2000, the industrial sector has improved its efficiency with 22.3% (NEEAP, 2007). The covenants with the energy distributors resulted in a CO<sub>2</sub> reduction of 17 million tons by 2000 (EnergieNed, 2001). Other conservation and efficiency policies involve regulation (e.g. standards for insulation, dwelling quality and car efficiency), financial incentives to purchase more efficient equipment, financial encouragement for saving behaviour (taxes, etc.); and communication, agreements, advice and labeling. The 1992 Building Decree sets constructional requirements, including minimal demands for energy efficiency. In 1995, the Energy Performance Standard (EPS) was introduced. Over time the standard in the Building Decree has been tightened several times and this has resulted in a stricter EPS as well (NEEAP, 2007). In 1996, Energy Labeling for Appliances was introduced as a European Measure. Another EU measure, the EU building energy (EPBD) law, was rejected by the Dutch government in 2005 because of high administrative costs. A simpler version of energy labeling for dwellings has been developed instead and will be adopted in 2008 (Odyssee, 2006). Energy efficiency within existing dwellings is a difficult chapter. Grants, information campaigns and energy tax do have some effect, but it all depends on voluntary action by households or house owners (Tichelaar, 2006). Several initiatives in the field of information campaigns and information provision have been in place over the years. MilieuCentraal is an important actor, offering practical and reliable information on environmental issues. Several websites provide tailored energy advice, advice on efficient

household appliances and energy labels that apply in the Netherlands (NEEAP, 2007). In terms of climate policy, the Dutch government takes efforts to meet its Kyoto target of a 6% reduction in greenhouse gas emissions (IEA, 2004).

Generally, Dutch citizens and policy makers are perceived to share a tradition of environmental awareness and concerted efforts to solve environmental problems. Eurobarometer (2006) data on awareness of climate change and energy issues among the general public confirm this. The 2007 Eurobarometer indicates that 50% of the Dutch consumers consider the reduction of energy consumption very important. However, the outcomes of such polls say little about actual behaviour.

In 2006, an average Dutch family household (2-3 persons) used 1,652 m<sup>3</sup> gas per year, 3,402 kWh electricity per year and 105 m<sup>3</sup> water per year ([www.milieuentraal.nl](http://www.milieuentraal.nl)). Electricity prices are relatively high. Natural gas is relatively expensive for households, but somewhat cheaper than average for industrial customers. Overall, the Energy Tax per unit of energy is higher for small consumers compared to large consumers, and have resulted in significant price rises for the first. Between 1996 and 2004 (the Green Energy Train ran from 2001 to 2003), energy efficiency of final consumers improved by 1% per year. This improvement was largely attributable to households (20%) and manufacturing industry (8%). With a yearly average improvement rate of 1.4%, the Dutch residential sector was one of the best performing sectors in Europe. Stringent building standards that have been tightened repeatedly have improved the energy efficiency of newly built dwellings considerably (Tichelaar, 2006).

The Green Energy Train project ran from November 1st 2001 till May 1st 2003 and coincided with a slowdown in economic growth. In spite of this slowdown, energy consumption increased - because production shifted towards more energy intensive branches like the chemical and primary metal industry. Between 2000 and 2003 energy premiums were available for households and organizations investing in insulation, renewable energy or energy-efficient equipment. The combination of these premiums with labeling of appliances were successful, but considered too costly, which was the reason to terminate the premiums in 2003. Next to energy efficiency in buildings and subsidies for energy-efficient equipment, the government also was interested in encouraging awareness building and energy savings resulting from conscious behavioural change at the level of households. The question however was which methods are suitable to apply at larger scale levels. The Ministry of Economic Affairs and the Ministry of Housing, Spatial Planning and Environment adopted a policy instrument to support experiments with methods to accomplish behavioural change, focused on the household level: the Tender Arrangement User Behaviour (called Enter). Projects aiming at a structural energy saving of at least 5% were eligible for a subsidy up to a maximum of 270,000 Euro (Kolijn and Oostdijk, 2004). The Dutch Organisation for Energy and Environment (Novem), an agency of the Ministry of Economic Affairs, executed the programme. In the period between 2000 and 2002, fourteen projects have been awarded financial support under the Enter arrangement. These were initiated by environmental consultancies, local governments, universities or energy companies. All projects developed and tested new methods to influence energy-related behaviour of households. The Green Energy Train Project Programme involved three projects that were eligible for the Enter subsidy.

The Green Energy Train Programme should be furthermore be seen in the light of the legacy of EcoTeam and Global Action Plan Netherlands. In the early nineties, Global Action Plan started behavioural change programmes targeting sustainable lifestyles: EcoTeam programmes. Financed by the Ministry of Housing, Spatial Planning and the Environment and the 'Postal Code Lottery', these programmes reached some 24,000 people as well as various organizations and companies ([www.globalactionplan.nl](http://www.globalactionplan.nl)). The initial aim, to roll out household EcoTeam programmes in all levels of society, has not been accomplished and interest in the household EcoTeam programmes was waning after 1996. Global Action Plan decided to discontinue in 2003, but several people and organizations involved continued to start projects

and programmes that somehow are based on the initial ideas and approach of the EcoTeam programme. Organization AardeWerk (initiator of the Green Energy Train) has been and still is closely involved with Global Action Plan Netherlands.

This case study is based on several evaluation reports and an interview. The assessment of success and failure is based on these accounts. The aim was not to make an in depth study of the variety of perspectives that may exist regarding the course of this project.

### *Local context*

Leidsche Rijn is a new city district of Utrecht municipality, located west of Utrecht. The development of this district started in 1997 and is projected to be completed by 2025, and it involves the largest housing and industrial development in the Netherlands. Its total surface amounts to some 2,100 ha and the aim is to offer room to 30,000 houses and 80,000 new residents by 2025. Of these houses, 30% will involve social housing (both for rent and sale). In early 2008, Leidsche Rijn counted 36,000 inhabitants and 14,000 households. Leidsche Rijn consists of some ten neighbourhoods and several of these are by now occupied. In addition, two business estates are in full operation. Planning and construction proceeds neighbourhood by neighbourhood, in order to enable the urban planners and architects to accommodate to new developments. Leidsche Rijn is built according to principles of sustainable construction. Large investments have been made in environmental protection and energy management - such as a rainwater collection system. The low-energy street lighting and the low-energy demand of the houses are to result in savings for both the municipality and the residents. Large areas of Leidsche Rijn are connected to the city's district heating system.

### *Specific context of the project*

Although the design of Leidsche Rijn may address water, energy and material efficiency issues, the sustainable character of the district in the end is something that needs to be carried by the residents. The "Sustainable House" in Leidsche Rijn, a zero-energy building, supports this by serving as an example and information centre. Since 2001, it commissions two-yearly inquiries on environmentally-relevant behaviour among new residents in Leidsche Rijn (SME, 2005). Outcomes are translated into recommendations for information provision and activities in Leidsche Rijn district. Surveys among the new residents revealed a lack of knowledge on environmental issues. Therefore, the municipal Neighbourhood Centre Leidsche Rijn was a proponent of encouraging sustainable behaviour at the household level through various initiatives and activities, including the Green Energy Train Project. The centre became an active partner in this project. The "Sustainable House" was a project partner as well, and it houses SME consultancy, which played a central role as manager and implementer of the Green Energy Train Project.

Some 550 tenants renting from housing corporation Mitros in the neighbourhoods Parkwijk and Langerakbaan have been approached for the Green Energy Train Project. The houses in these neighbourhoods are designed to have a low energy usage, while not losing out in comfort. For the Neighbourhood Centre, the most important aim of the Green Energy Train Project was to improve energy-relevant behaviour at the household level. Behavioural change by residents was central, not so much technological change.

Initially, the idea was to target new residents: when people move to a new home, they are open for suggestions to do things differently. Hence, this provides a 'window of opportunity' for behavioural changes. However, newly delivered homes in Leidsche Rijn needed extra heating for 2 to 3 years, to 'dry' the houses. It made no sense to have participants participate in a project aimed at energy saving while they were still in the midst of this 'drying' phase. The window of opportunity for behavioural change therefore was lost. The targeted people



were living in their houses for 2 to 3 years and their new routines and habits had already gotten shape.

Since Leidsche Rijn was such a new district in 2001, there was hardly any local experience with Demand Side Management projects. Even though crucial project partners of the Green Energy Train Project were based in Leidsche Rijn, the project faced limitations in opportunities to link up with local social networks - these were overall absent. In addition, the issue of environment and energy had to compete with other interests and worries of the residents. People who had their houses more or less in order, started to concentrate on other basic public facilities like roads, schools, banks nearby etc. The Green Energy Train Project was a counter part of a similar initiative that originated in The Hague. It was not embedded in a larger programme, campaign or activity.

## Step 2: Focus of DSM programme

### *General issues*

The project was initiated November 1<sup>st</sup> 2001 and lasted until May 5<sup>th</sup> 2003. The total costs amounted to €181,613. The project was financed for €167,916<sup>1</sup> (Kolijn and Oostdijk, 2004). The overarching programme initiator and manager was consultancy AardeWerk in The Hague. The idea was that the counterpart project Green Energy Train The Hague would run ahead and that the educational material (with improvements) would be provided by AardeWerk to the project manager SME to use for the Green Energy Train in Leidsche Rijn. However, the timely provision of material and information for the project managers in Leidsche Rijn failed due to delays in the The Hague project. Instead of following behind the project in The Hague, the Green Energy Train Project Leidsche Rijn at a certain point was even ahead (Interview SME, 2008).

### *Initiator and partners*

Locally, the municipal *Neighbourhood Centre Leidsche Rijn* was the initiator, aiming at 10% energy saving through the Green Energy Train Project. Initiator of the overarching programme was *AardeWerk*, a consultancy firm that is specialised in projects and education promoting a sustainable lifestyle. AardeWerk is closely involved with the Dutch Global Action Plan and an important player in the field of behavioural change programmes in the Netherlands. For the Green Energy Train, it provided the method and coach training. *SME Environmental Advisors* was the project manager and implementer based in Leidsche Rijn. SME has been active for many years in the field of communication, participation and education related to sustainable development. *Careton&Partners* was involved to conduct a preliminary inquiry among residents in Leidsche Rijn. *Bureau Yvonne Feijen* developed the educational materials. The *Sustainable House* provided room for meetings and information. Housing Corporation *Mitros* provided addresses of residents, published information in their newsletter and was involved in the first presentation of the project. Energy company (*Eneco/Remu*) was involved by giving a presentation on green electricity at an activity-meeting. *Leiden University* investigated behavioural changes resulting from the project. *BEA Advice* provided software with which participants could report their energy data.

The project received a subsidy from Novem (agency of Economic Affairs Ministry), from the Enter programme (deriving from both the Ministry of Economic Affairs and the Ministry of Housing, Spatial Planning and the Environment). The Enter programme subsidised experiments and knowledge transfer using new methods in order to influence energy-related behaviour in households. Enter subsidised 167,916 Euro (Kolijn and Oostdijk, 2004).

### *Problem definition*

Apart from designing new neighbourhoods and houses in such a manner that water, energy and material efficiency is taken into account, to consolidate sustainability you need to target the behaviour of the people who live there. The Green Energy Train aimed at doing the latter and learning more about how this can be done best.

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<sup>1</sup> Both the total costs and the subsidy in the end were lower than these numbers, but it is not known how much exactly (Kolijn and Oostdijk, 2004:35).

### *Goals and objectives*

The stated goals of the Green Energy Train Project Leidsche Rijn were formulated as follows (SME, 2003; 2004):

- To apply an educational method, initially developed for target groups in existing housing, to be adapted for target groups in new housing areas - in particular on a VINEX<sup>2</sup> location like Leidsche Rijn.
- To test this new method in terms of effectiveness for this particular target group of social housing tenants. The objective was to monitor the realised energy savings.
- To have the impacts of this experiment investigated by an experienced research organization (Leiden University).

A requirement connected to the subsidy was to accomplish at least 10% energy saving by effecting lasting behavioural changes in household energy use - e.g. heating, cooking, hot water use, electronic appliances. This goal was also underscored by the Neighbourhood Centre Leidsche Rijn. While energy saving was central, it was understood in a broader context of enhancing the liveability and sustainability of the neighbourhood. It would be up to the workshop participants to give a more concrete understanding/focus of this.

The idea was to upscale learning experiences of the Green Energy Train The Hague to this new target group. The education material could be adapted with practical examples tailored to this particular housing situation. Behavioural changes would be monitored and investigated on their durability in a 2<sup>nd</sup> phase of the research by the University of Leiden. A final report was to give recommendations for further upscaling to larger numbers of tenants in Leidsche Rijn and other VINEX locations in the Netherlands.

The program was ambitious in that it aimed at combining methodological goals with energy saving targets (10%). At the same time, the broader issue of living sustainably in the neighbourhood was an overarching theme.

### *The targets and target group*

The target group involved tenants in newly built housing, in the neighbourhoods Parkwijk and Langerak (tenants of 530 houses in total). In Langerak, it concerned residents living in three tower buildings, in Parkwijk family-houses. Many of these people had previously lived in parts of Utrecht (e.g. Overvecht, Kanaleneiland) and moved to Leidsche Rijn. The target group consisted largely of young starters, families with children and to a lesser extent elderly people and singles. These neighbourhoods were chosen because the building was finalised and the houses occupied (and 'dried'). Because the project was announced through the public media, other interested residents could also get information about or participate in the project.

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<sup>2</sup> VINEX refers to Fourth Policy Document on Physical Planning-Plus (1993). VINEX locations is a term used for the new housing development around the large cities after 1993.

## Step 3: Design of programme

### *What knowledge and ideas informed the design of the programme?*

The Green Energy Train Project was based on a philosophy of the “Long Live Energy” programme, developed by AardeWerk in The Hague. It places emphasis on how the more abstract level of one's worldview affects behaviour - e.g. changes in values will affect changes in behaviour. Hence, participants are encouraged to inquire into the underlying motivations of their behaviour. This method involves education and information provision, but aims to be flexible enough to adapt workshops to the needs of the participants. As such, the approach is demand-driven, attempting to identify those elements that participants consider important. The educational method divides energy into five elements (earth, water, fire, air, ether). It assumes a natural changing process that works through these elements, which is explained as follows (SME, 2004). At first everything is considered solid and stable, like the earth itself. In the ‘water phase’, old ideas are being soaked off. The element ‘fire’ ensures motivation and action towards change. In the ‘air phase’ new things are tried and in the ether phase the new situation is being consolidated. These premises have been translated in a course and activities around a theme. Supported by the educational materials that includes exercises, the participants ‘move’ through the various elements. They do this with reference to four levels: the level of the individual body, the household, the direct environment or neighbourhood and the wider world. The educational material is structured along these 5 elements and 4 levels.

### *Research conducted on target group*

Prior to the project, Careton & Partners conducted three in-depth interviews with residents to gain a better understanding of the issues that are important for people in Leidsche Rijn. Next, a group meeting with a number of residents was held. In addition, interviews with the people from SME were held to gain insight in the expectations of the project managers. However, according to SME there has been no translation of the findings from these inquiries into conclusions or recommendations to SME - for whom such recommendations would have been useful (Interview SME, 2008). There was no insight in the level of knowledge of the target group or their commitments and interests. The method had not been tested on the target group beforehand.

### *What barriers, motives and capacities did the programme aim to target?*

The project placed emphasis on values and motivations of participants. As such, it worked from the abstract to the more practical level. Apart from energy savings resulting from behavioural change, the project did not explicitly address other benefits (e.g. saving money).

### *The intervention methods/instruments and activities used*

*Preliminary inquiry* into needs and interests of residents. This was undertaken by Careton & Partners.

*Recruitment and training of coaches.* Three coaches from the neighbourhood were recruited and AardeWerk provided training them

*Information provision, announcements of the project.* Through various public media, and at public neighbourhood activities.

*Energy course.* The course was aimed at encouraging energy saving behaviour. It involved two workshop meetings and one come-back meeting, but this could be adapted. For instance,

neighbourhood association ‘Het Binnenhofje’ preferred to have a one-evening course instead of a full course.

Table 1 depicts the type of educational material and tools available. SME started each first workshop meeting with the question: “What is living long & happily in Leidsche Rijn according to you?”, in order to encourage participants to express their ideas, needs and concerns.

The materials delivered by AardeWerk all involved representations of the 5 elements (earth, water, fire, air and ether) at 4 different scale levels from the individual, towards the household, the neighbourhood and finally the wider world level. Because the material lacked specificity regarding the Leidsche Rijn situation, SME devised and added written material about gas, electricity, water, waste, sustainable household activities and sustainable gardening. A representative of the Neighbourhood Centre gave a presentation on Leidsche Rijn. All this was done separate from The Hague. Participants were provided with software so that they could report on their energy use.

**Table 1: Educational material**

Material used at the workshop meetings	
Investigating landscape (meeting 1)	Visual representation of a landscape, with a route for the Green Energy Train that moves through different areas representing the 5 elements
Visuals (meeting 1)	To clarify the 5 elements and the 4 levels (individual, household, neighbourhood, world)
Association cards (meeting 1)	To provide participants with more insight in the relationships between the 5 elements and 4 levels and how these are connected to personal views
Written information, added by SME (meeting 1 & offered at meeting 2)	Concrete info on water, electricity, gas, sustainable gardening, household activities (klussen) and waste in LR
Talking circle or ‘discussion disc’ (meeting 2)	To clarify the connections between the 5 elements and the 4 levels. By taking concrete examples, people talk about the effects on levels and elements
<i>Leidsche Rijn for beginners</i> (presentation by municipal Neighbourhood Centre)	Representative of Neighbourhood Centre informs participants on special features of LR, like the closed water system, natural growth etc.
Materials used at other moments	
Coach instruction	Explaining the material and underlying philosophy
Four newsletters	Disseminated during the project period
Posters	Idem
Access application	To monitor. Each in-between report to the participants was accompanied by an energy-related advice.

*Activities.* Apart from the workshop meetings and in response to questions asked by participants, activities/meetings were organised: a meeting with the neighbourhood constable, a guided tour in the Sustainable House and a presentation on sustainable electricity.

*Evaluation.* Leiden University conducted pre-and post inquiries among both participating and non-participating residents (control group).

### *Participation*

The preliminary inquiry mentioned above did not result in any changes or adaptations of the programme. Making use of existing social networks was not possible as these were not yet developed well. In fact, some participants stated that the lack of local social contacts had prompted them to participate in the Green Energy Train project. During the course, participants were asked to express their needs. With regard to formulating goals, this did not necessarily result in goals directed towards diminishing energy use. Often, participants did not arrive at the formulation of any goals at all. They wanted to hear from the project manager what was expected from them, what they were expected to do.

### *Commitment*

#### *Communication*

The project had been announced via local media: newsletters, an article in the housing corporation newsletter, posters, information on the Sustainable House website, promotion activities at the Leidsche Rijn day and other local public events. The inquiry of Leiden University showed however that not everyone knew about the Green Energy Train project (20% of respondents did not know that this project existed, 38% could not recall having seen an invitation to participate). SME concluded afterwards that although it had been a good idea to approach residents directly, for instance at local public events, the recruitment-message had been not clear. The same goes for the project title Green Energy Train, which was somewhat misleading (e.g. people thought it was a project involving transport or trains) (Interview SME, 2008).

Three people from the local community were recruited to receive coach training from AardeWerk. However, the would-be coaches found the training too complex and time consuming and they dropped out. This meant that eventually, SME had to give the course.

Participants received a map with the course material that was attractive: very colourful, playful and visual. The course helped to make people aware from their energy (use) in all thinkable forms and manners, but did too little to make them aware of *concrete* actions to save energy. The overarching message proved difficult to communicate. This message addresses awareness of all forms in which energy manifests itself. In this understanding, not only energy saving, but also living sustainably and happily is part of this. Starting from such a broad basis, while also inviting participants to bring up issues they want to address, within a time frame of only three meetings of a couple of hours each, is not likely to result in concrete energy saving accomplishments. SME thought that the material and method was unsuitable for the target group (and the would-be coaches), as it was too complex and too distant from the daily realities of people. The method starts from abstract notions, working towards concrete goals and activities. SME's preferred approach works the opposite way: starting with very concrete objectives that appeal directly to participants and from there work towards the broader aims. In such an approach, the motivation for changing behaviour can be very trivial (saving money).

### *Learning, evaluation and monitoring*

The Enter subsidy required that the effects of the method on energy saving behaviour would be measured. A budget was made available to conduct surveys before and after, involving participants and a control group. The University of Leiden conducted this research, collecting data at the start and at the end of the project from both participants and a control group (Staats, 2003).

The design of the evaluation was quasi-experimental. The participants were compared with non-participants in their attitudes and behaviour. Next, changes in pre-measurements (October

2002) and post-measurements (April 2003) were to be analysed to see if participation in the project has had effects that are not visible in the non-participant group.

Out of 550 households, 102 residents completed the both the pre- and post measurement. This group included only 13 participants of the Green Energy Train Project. Due to this limited number, identifying changes in behaviour and attitudes was statistically hardly possible. Only some trends are visible, suggesting stronger behavioural change towards energy-saving among participants compared to non-participants. One visible effect indicates that participants have become more aware of their behaviour and less routine-like. Here again however, the small number of participants makes it difficult to draw strong conclusions (Staats, 2003).

A computer programme was offered to the participants to report their energy use. Software problems complicated this task for both the participants and SME. The number of participants that reported the data was very low (9). None of the outcomes are significant. What can be concluded however is that the energy saving goal of 10% has not been reached.

#### *Link to other programmes and policy*

Apart from the connection to the Green Energy Train Programme in The Hague, the Green Energy Train Project Leidsche Rijn was not embedded in or related to other programmes. However, local actors like the Neighbourhood Centre and the Sustainable House were active in encouraging sustainable behaviour in Leidsche Rijn and they have provided input and support to make the Green Energy Project more concrete.

## **Step 4: Process of programme**

### *Interaction between the different participants*

Communication between the different project team members was difficult from the outset. AardeWerk did not timely provide information or material for the Leidsche Rijn Project. The project managers from SME felt they had too little information to proceed, but received little feedback when asking for more information. Changes in the method in The Hague were not or too late communicated to Leidsche Rijn. SME felt that AardeWerk regarded them merely as executors of the programme and that there was little room to discuss the materials. The material had not been adapted to the particular situation in Leidsche Rijn, even though this had been the initial intention. AardeWerk had decided that changes were not necessary, according to SME. The communication between Careton & Partners and SME did not go well either. Both AardeWerk and Careton were strongly inspired by the underlying philosophy of “Long Live Energy”, for SME this was not the case. A representative from energy company Eneco/Remu stepped out because he considered the approach ‘too vague’. SME, like the municipal Neighbourhood Centre, was much closer to the target group and more involved with the local issues relating to sustainability in Leidsche Rijn. SME and the Neighbourhood Centre cooperated closely. The connection between Leiden University and the Green Energy Train Project was rather distant. When it turned out that the survey lists presented by Leiden University were too complex and lengthy for the participants, Leiden University adapted the lists for the second measurement.

### *Reaction of the project manager to issues/problems*

SME became more proactive in the project. When there were no coaches, SME took on this role. In addition, it added materials to the course in order to make it more concrete. The Neighbourhood Centre also contributed to this by providing a presentation on Leidsche Rijn.



## Step 5: Outcome of process

### *Objectives/goals/outcomes*

Overall, 45 participants have joined the course. This was 8% of the target group, which is not a large percentage. On average 7 to 8 residents attended the three activities.

Coach trajectory:	3 participants (dropped out)
Official course :	29 participants
Short course for ‘het Binnenhofje’:	13 participants
Activity 1: Sustainable House:	9 participants
Activity 2: Neighbourhood Police men:	7 participants
Activity 3: Green Electricity:	7 participants

The aim to accomplish 10% energy saving in households by bringing about lasting behavioural changes among the target group has not been reached. The only reported effect was that participants have become more aware of their behaviour. Next to energy saving, sustainability and liveability were also aims, but these were difficult to communicate to the residents. Other goals involved the applying of an educational method, testing this method in terms of effectiveness, and measuring the impact of this experiment. These goals have been partially achieved. The method has been applied and tested. The measuring of the impacts was complicated by the lack of reported data. For the municipal Neighbourhood Centre Leidsche Rijn, the energy saving target was central, but for the Green Energy Train Programme, the goals involved in the development and testing of the method were important too. Hence, different project team members were interested in different aims of the project. The project manager SME and the Neighbourhood Centre Leidsche Rijn did not consider the Green Energy Train Leidsche Rijn successful.

### *Effectiveness*

Time was wasted on waiting for instructions from The Hague. It took the project partners a lot of effort to start the project. Recruitment of participants was ponderous. In terms of timing and budget, there were no serious problems during the project - but when considering the accomplishments of the project, it can hardly be considered successful and cost-effective.

### *Social learning*

From the limited information in terms of participant evaluation, it appears that they found that they had learned things. They appreciated the meetings as informative and cosy. Activities (visit to the Sustainable House, a demonstration house; a meeting with a presentation about green electricity; a meeting with the neighbourhood constable) were found instructive.

Furthermore, several lessons can be summed up as follows:

- For SME, a lesson was that managing a project without being granted influence is not desirable.
- Clarity among the project team members about roles and expectations is crucial. The lack of this in the Green Energy Train Leidsche Rijn hampered collaboration.
- Regarding the approach towards the target group, a lesson was that if any preliminary inquiry takes place (e.g. through interviews), the results should be used for the design of the particular project. Before deciding to undertake in-depth interviews residents, it should be clear why and with what purpose this is done.
- Aligning with residents can be good but this should not go at the cost of formulating clear goals/objectives towards them.

- If the scope is not clear, it becomes harder to explain to participant what is expected from them. Leaving everything open, to be filled in by the participants, only works when the method is helping them to arrive at the definition of concrete goals.
- When a method lacks concreteness, it is very demanding on coaches and participants.
- Using material that is colorful, playful and visual is helpful.
- Measuring may not be needed when the passage time of the project is not very long. It may in cases be undesirable, when you know that the particular participants have difficulties with reporting numbers.
- When using questionnaires, these should be adapted to the respondents group (or participants should be able to get support when filling the questionnaires).
- When the underlying philosophy is very present in the educational material, this may appeal to higher-educated people who happen to be interested in this. The majority however prefers to work with practical questions like ‘what can/should I do?’ or ‘ what is in it for me?’

The method and educational material focused more on creating awareness and less on concrete saving behaviour. No behavioural changes, let alone other benefits, have been accomplished. The project was too small in terms of numbers of participants and time frame to result in new networks or institutions being built.

#### *Follow-up of the programme*

No follow-up has been planned as the project team felt that the project has cost too much time and resulted in too little. The municipal Neighbourhood Centre has however continued its efforts at informing residents better about how to deal with energy in and around their households.

## Step 6: Analysis and conclusion

- Goals and objectives

In case there are multiple goals, it should be checked if these are reconcilable and who is committed to which goals. The method should fit with the overarching/final aim - energy saving in this case.

- Scope

The scope should be considered in relation to the resources and time available: e.g. when you only have three meetings, addressing sustainability in its broadest sense may not be a good idea.

- Collaboration and trust among project team members is crucial

Mutual expectations (e.g. concerning the planning, competences and responsibilities) should be made clear at the outset, but also during the project because roles or perceptions of these roles may change during the course of the project. Planning schedules should be clear for all and changes should be communicated to the members timely.

- Material and method

The design of the project and the materials should be tailored to the target group, the particular geographical setting and be suitable to achieve the goals (e.g. material suitable to create awareness may be less useful for addressing concrete ideas for intervention).

The method and material used should be tested in advance, so that necessary changes can be made. It makes sense to choose a method that is attractive for a broad target group

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## **Interview**

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