



KZN Housing

*uMnyango:
wezeZindlu*

ISIFUNDAZWE SAKWAZULU-NATALI

REPORT ON VISIT TO HIGHFLATS ENERGY CENTRE, UBUHLEBEZWE MUNICIPALITY

24 APRIL 2009

PREPARED BY PRODUCT DEVELOPMENT

TABLE OF CONTENTS

1.	EXECUTIVE SUMMARY	1
2.	PURPOSE.....	1
3.	BACKGROUND.....	1
4.	HIGHFLATS ENERGY CENTRE.....	1
5.	CHALLENGES.....	6
6.	LESSONS LEARNT/OBSERVATIONS	6
7.	RECOMMENDATIONS.....	7

EXECUTIVE SUMMARY

The report shares findings on a visit to the Highflats Energy Centre (HEC). The visit was undertaken to gain knowledge into alternative energy efficient products which can be utilized in a rural setting, as well as the costs and efficiency of these products. In addition knowledge on the establishment and operation of the centre was gained.

RECOMMENDATIONS

- alternate energy products should be promoted in rural settings instead of reliance on grid electricity only
- the wheel and spoke model should be replicated in other municipal areas as it will result in economic opportunities, poverty alleviation and sustainable human settlements.
- Municipalities to encourage the testing of alternative energy products in housing projects

1. PURPOSE

The purpose of this report is to share findings on the visit to the Highflats Energy Centre which was undertaken on 24 April 2009.

2. BACKGROUND

- 2.1 The Product Development Directorate is tasked with research into indigenous, innovative and alternative technologies associated with housing.
- 2.2 The purpose of the visit was to assimilate information relating to sustainable and efficient alternative energy products.

3. HIGHFLATS ENERGY CENTRE

As a result of the majority of households still relying on traditional biomass to meet their energy needs there is a need to provide affordable energy supplies to these individuals. The Energy Centre at Highflats is the outcome of the Department of Mineral and Energy's Integrated Energy Centre Strategy and Action Plan which aims at establishing a network of self-sustaining energy centres with the purpose of facilitating and extending access to modern energy

services to the poor population. The overall goal of the project is to find sustainable solutions for the effective delivery of local energy resources to poor communities thereby assisting in alleviating poverty and contributing to sustainable development. Funding for the project was obtained from the Department of Science and Technology, funding for the renovation of the building was provided by Dutch Energy research Centre of the Netherlands (ECN) and the National Development Agency is providing funding for the operation of the centre. The Local Municipality plays an active role in the operation and promotion of the centre.



Highflats Energy Centre Location

The Highflats Energy Centre is different from other centres in that it is self sustaining without the incorporation of a petrol company in the initiative. An assessment of the Ubhlebezwe area revealed that a high percentage of households in the municipality relied on wood, paraffin and gas. The supply of energy products in the area was found to be restricted and inefficient and there were several middle men in the selling process hence leading to high final product prices.

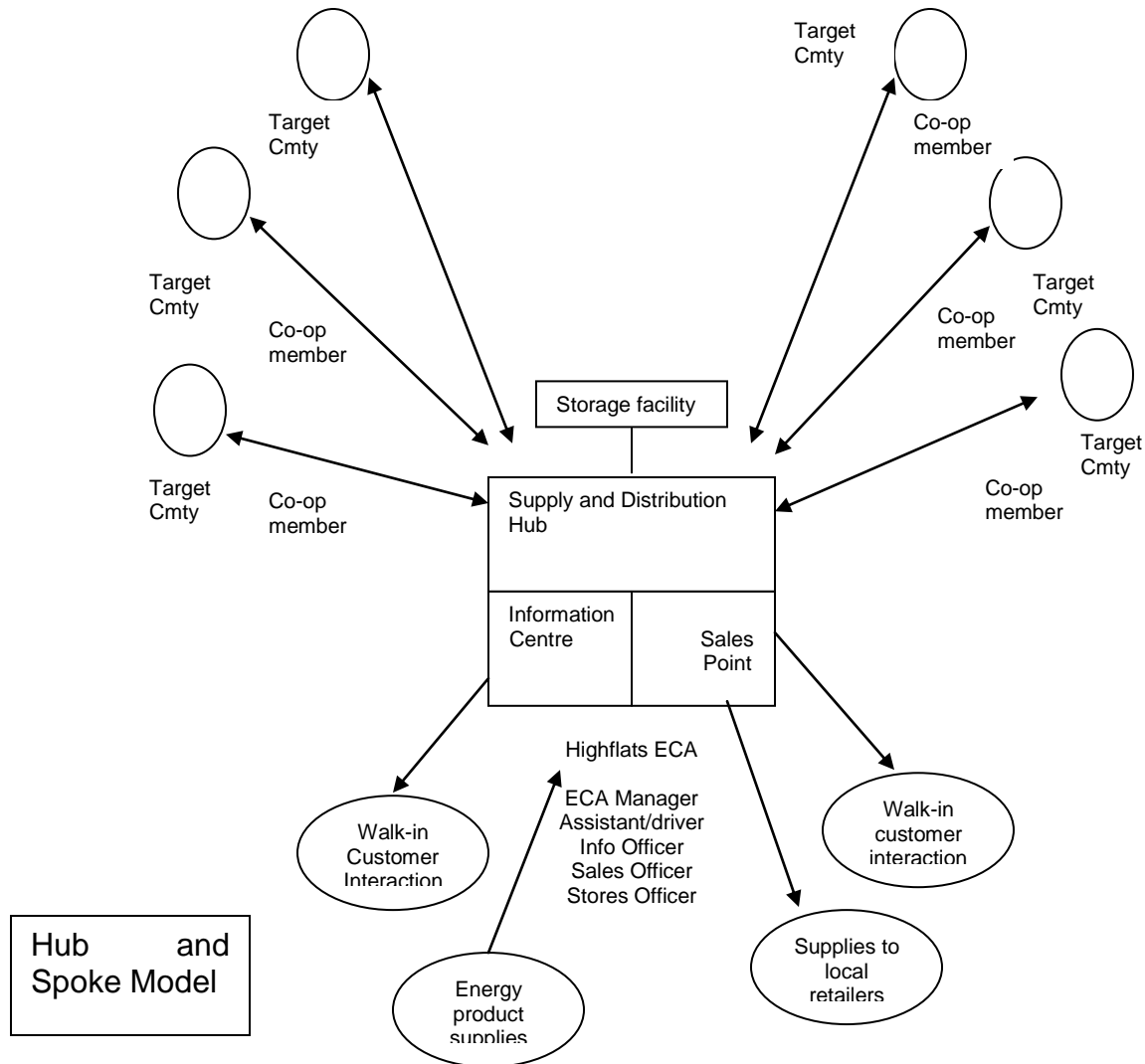


Highflats Energy Centre

To ensure that the products provided by the centre are adequate for the community a needs assessment was undertaken thereby identifying and prioritizing their energy needs. A list of products and services was then created and included viz. energy efficient lights, batteries, gel fuel stoves, paraffin in safty bottles, wood stoves, etc. The team then negotiated with suppliers of products so as to get the lowest possible prices for the products.

The centre is owned and run as a co-operative by local people (current membership is 13 co-operatives). The aim is to ensure the most efficient way of delivering products to residents within Ubuhlebezwe, especially the rural areas. This is to be achieved by a “hub & spoke model” of distribution. The centre will have a threefold function viz.

- Main Distribution point – for products offered by the centre and co-op members.
- Sales point – direct retail outlet
- Information centre – awareness raising programmes, training, etc.



Hub & Spoke Distribution Model

The hub-and-spoke distribution model is a system of connections arranged like a wheel, in which all traffic moves along *spokes* connected to the *hub* at the center. The model is commonly used in industries. In the HEC the hub is represented by the Supply and Distribution centre (distribution point). From the centre there are linkages (spokes) to

- Energy suppliers, walk-in customers and retailers
- Co-op members who in turn supply the surrounding community.

The spokes represent the lines of supply/distribution between the energy centre and the co-op members' enterprises.

The centre is housed in an abandoned building next to the proposed Multi Purpose Community Centre. The centre currently has some items for sale and other products will be included. The information centre has some material available for distribution and also has a TV and DVD facilities for use in workshops and other capacity building initiatives. The centre has partnered with SEDA to provide some of the training courses.



Information material which can be obtained at the centre

It is also envisaged that the centre can also result in retail opportunities for small businesses e.g. cell phone charging, leasing of solar power equipment, sewing machine centre, etc.

Some of the products available for sale at the centre includes:



Gel fuel for cooking is made from sugarcane. It is bio-ethanol fuel in gel form. It is very safe to use as well as being environmentally friendly. Amongst the range of benefits, gelfuel is Non-spill and non-explosive, Non-flare and non-toxic. It does not 'run' so flames are contained in one place, and the flame can be blown out. When water hits the gel during cooking, it does not splatter and it is smokeless so there are no harmful fumes.

Gel Stove & Gel



Para Safe Stove

Para safe stoves
It was developed to address the plight of unsafe stoves exploding, catching on fire, leaking fuel and causing accidental fires.

Vesto Stove

The stove allows individuals to manufacture their own fire briquettes. The principle is that this recycles waste paper and cardboard into combustible bricks that can be used in place of firewood in a stove. The paper can be burned alone or it can be mixed with many combustible fuels like wood chips, grass or coal dust. Paper is a very good binder and so can be used in combination with any other waste fuel that is available. Wood can also be burnt in it.



Vesto Stove

4. CHALLENGES

- Timeframe for approval of project.
- Operational budget from National Development Agency still awaited. This makes the running of the centre difficult. Need funds to purchase products.
- Marketing and promotion has not been undertaken due to limited funding.
- Lack of transport to get products to co-op suppliers.

5. LESSONS LEARNT/OBSERVATIONS

- 5.1 There is a need for an NGO to initiate such a project and for the co-op members to be committed to the process. Department should investigate possibility of forming partnerships with NGOs in such initiatives.
- 5.2 A partnership should be formed with the Department of Minerals and Energy to roll out such projects in other areas.
- 5.3 The utilization of alternate energy products contributes to sustainable environmental practices.
- 5.4 The roll out of such a project would also provide economic opportunities for communities.

6. RECOMMENDATIONS

- 6.1 Alternate energy products should be promoted in rural settings instead of reliance on grid electricity only. These forms of technology could also be utilized in informal settlements.
- 6.2 The hub and spoke model should be replicated in other municipal areas as it will result in economic opportunities and poverty alleviation. A lower dependence on conventional energy sources and the introduction of income generating opportunities would result in the establishment of sustainable human settlements.
- 6.3 Municipalities to encourage the testing of alternative energy products in housing projects.
- 6.4 Projects of such a nature need to consider exit strategies in its design so as to reduce dependency of beneficiaries.