

## **EPI SoHo Final report**

### **Energy Performance Integration in Social Housing,**

**An approach with added value**

**Overview of results**

**Energy Performance Integration  
in Social Housing**

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# 1 Introduction

## 1.1 Aims and objectives of EPI SoHo.

EPI SoHo means for **E**nergy **P**erformance **I**ntegration in **S**ocial **H**ousing. The EPBD is a strong initiating driver for energy policy in social housing. The mandatory energy certificates lead to a need for data on energy performance of the building stock. These data thus provide the possibilities for stock analyses and scenario calculations to find an optimum mix of strategic choices of management. This creates **added value**.

The implementation of the EPBD and – even more important – the realisation of energy saving, based on Reduced Use of Energy (RUE) and Renewable Energy Sources (RES) by Social Housing Organisations (SHOs), can only be successful if there is a balance between the costs and benefits (including added values for the social housing management), a closed quality circle to keep energy data and certificates up to date and a powerful collaboration between partners on a local level.

The EPI-SoHo Approach for SHOs therefore had the following objectives:

- a. Create a cost effective large scale energy assessment method;
- b. Create an effective approach for embedding energy assessment data in policy processes such as portfolio management.
- c. Create a successful approach for local collaboration.

During three years the project partners from Italy, France, Germany, Denmark and The Netherlands developed the different parts of the EPI SoHo approach and finally tested the approach in pilot projects. This final report gives an overview of the results of the project.

We think the results will be of great help for everyone wanting to make this world a little better especially for those seeking to reduce the costs of living for tenants and environmental improvement

## 1.2 Design of this report

The next chapter deals with the backgrounds of embedding energy in portfolio management. Why should a social housing organisation act on energy performance of the housing stock? What are the main drivers for policy making?

External circumstances will more and more force SoHo's to formulate energy policy and rearrange the organisation in order to make great energy performance improvements in their housing stock.

Chapter 3 will provide an answer to how this policy making and embedding in the organisation can be done in an efficient and effective way. The EPI SoHo approach can be applied for assessment and embedding. The experiences of the pilot projects will be integrated in the text; proving it is not just a theoretical report, but practice based.

This chapter will be the main part of this report, so it is divided in logical paragraphs.

Chapter 4 shortly describes the approach for successful local collaboration.

When more detailed information is needed references to the various EPI SoHo reports will be supplied.

## 1.3 Target audiences

Although a strict dividing line cannot be drawn parts of the EPI SoHo approach focus on a different target audience. The assessment-method will be of special interest for EP-consultants. They will (mainly) *execute* the EP-assessments and thus gain profit from the EPI-SoHo method. The *embedding* of EP-data in the SHO-processes consequently aims at the SHO as the main target audience. The chapter on local collaboration is useful for both social housing organisations and local authorities.

As stated before: because of the strong interconnection between the different parts of the approach all audiences have to be encouraged to get acquainted with all of EPI SoHo

The EP-consultant cannot deliver the right quality in the assessment phase if he does not understand and incorporate the ideas of the implementation phase. The SHO cannot fully profit from the EP-assessments if it does not know the pitfalls and possibilities - especially regarding cost-effective solutions in this first phase. The local authority will be a better counterpart when it understands the internal processes in the SHO.

## 1.4 EPI-SoHo method and EPBD

Although still not every EU-country has fully implemented the EPBD in national laws and regulations, one important aspect can already be discovered regarding the scope of the national requirements and the scope of EPI-SoHo. National implementation of the EPBD may focus on the EP-certificate in a 'thin' or 'narrow' way.

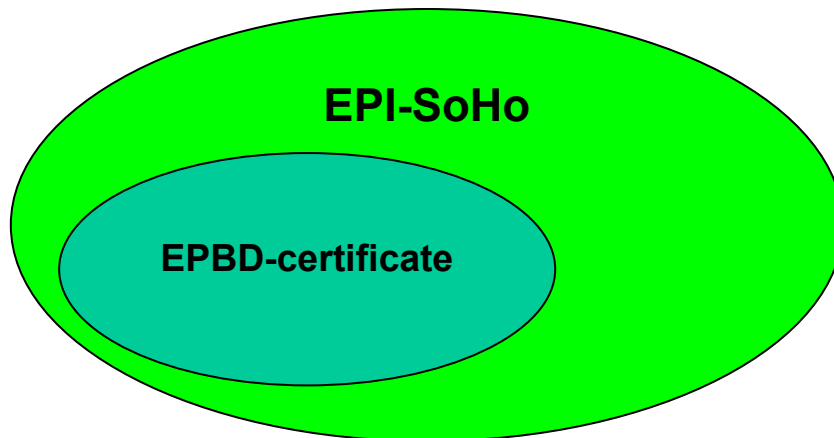
The EP-certificate gives an insight in the present energy-quality in a benchmark-way (quantified). At the best of times it will give an *impression* of possible ways of improving the energy-performance (*not* quantified). The methods and tools can be rather simple (see D2.1).

EPI-SoHo has a broader scope. The EPA-SoHo method must explicitly be useful for the SHO across a broad range in portfolio-management and portfolio-policy making \. Thus energy efficiency measures need to be fully calculated to get a clear view on costs and benefits when making managerial choices.

The EPI-SoHo method must also meet the national EPBD-requirements and the data assessed method must be useful to the certification-method as well.

The relation between EP-certification and the EPI-SoHo method is visualised in the following figure.

*Figure 1.1: Relation between EP-certification and EPI-SoHo method*

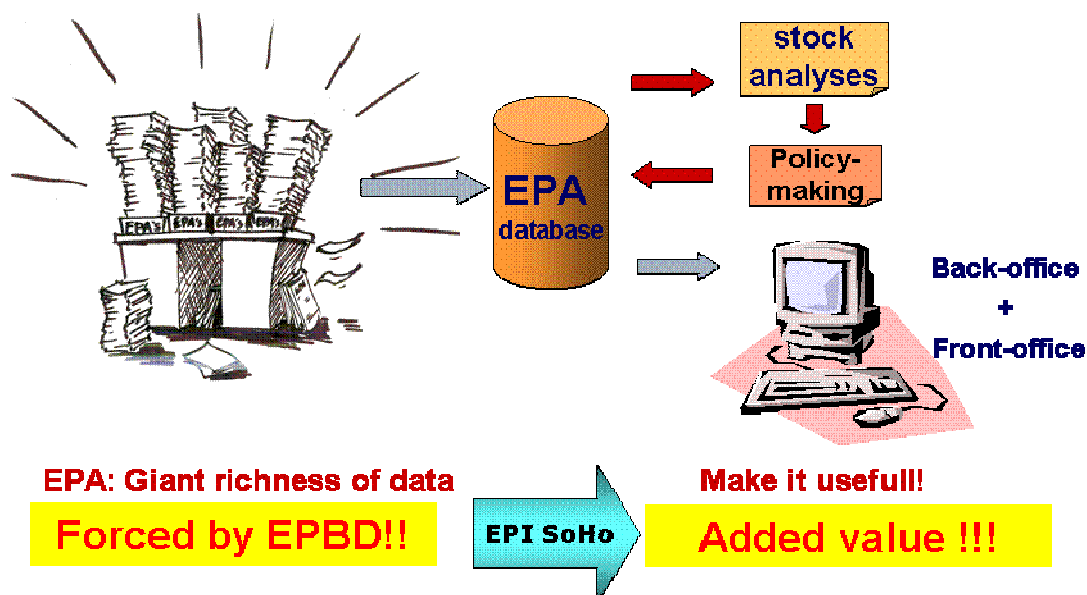


EPI-SoHo covers and is broader than EPBD-requirements

## 1.5 Adding value to the EP certificate

The national implementation of the EPBD is often driven by cost consideration. A low cost EP certificate, however, does not have much added value for the SHO. The challenge of the EPI-SoHo project was to create a method in which this added value is clear and crucial and still cost-effective. We would like to emphasise this is possible because even for a 'thin' EP certificate a lot of data has to be collected; a small extra effort will lead to much greater data value.

*Figure 1.2: added value*



## 1.6 EPI SoHo and national context of social housing

Of course there are a lot of differences in both the national contexts and the way SHOs are organised and managed. EPI-SoHo uses the *similarities* as a basis for the common Approach; on the other hand EPI SoHo *facilitates* adjustments to national variations.

Similarities were found by focussing on the *processes* and the *targets* within the SHOs.

Common main targets are:

- Control or lowering costs of living;
- Provide enough and good quality housing;
- Financial security and continuity of the 'business'
- Meet the needs of stakeholders.
- Compliance

Common processes in the SHO are:

- Strategic policy making process
- Process of Asset Management
- Process of planned maintenance
- Process of Refurbishment
- Daily rental process (transfers of tenants, ..)
- Data management process

The way the targets and processes are prioritized and organized will differ per country and per SHO. EPI-SoHo therefore had to focus on a rather abstract or framework-like level and global scope as mentioned before, so that every SHO can fill in the details according to its specific circumstances.

The implementation of the EPI-SoHo method can only be successful if a careful project-approach is used. Elements of this project approach are:

- Inventory of specific circumstances (country, local or SHO-specific);
  - What is the legal framework concerning energy?
  - Inside the SHO: what is the experience and attitude towards energy saving?
  - Regarding stakeholders: what is the interest of tenants organisations and local authority (covenant-approach?)
- Find the right routines (formal interviews / working sessions / creative games / ...)
  - Adjust to culture and existing management routines
  - Ensure an optimal commitment!
- Check if the standard EPI-SoHo-process steps and management structure are suitable, or need adapting or refining

Use effective tools (reports, sheets, diagrams, examples, best practices)

The diversity of the pilot projects clearly demonstrates that the EPI-SoHo approach can be adapted to specific needs and applied under varying circumstances and in different stages.



## 1.7 The EPI SoHo team and exchange network

The team of the EPI SoHo project consists of the next mentioned partners:

Country	Organisation	Representatives
<b>Denmark</b>	SBi	Niels Bergsøe
<b>France</b>	CSTB	Mireille Jandon, Nicolas Couillaud
	LOGIREP	Stéphane Wallon Pierre Touya Mathieu Boiron
	SICF	Dominique Blanc Jérôme Bouillon
<b>Germany</b>	Bauverein	Iris Behr Arne Schreier
	IWU	Eberhard Hinz, Andreas Enseling
<b>Italy</b>	AGIRE	Cristian Carreretto Edoardo Tognon
	ATER	Simone Zanardi Domenico Contarin
<b>The Netherlands</b>	WBB (co-ordinator)	Frans Lemmens Jeroen Harbers
	TBV Wonen	Peter den Biggelaar
	Tiwos	Martin Roders
	City of Tilburg	Pieter Biemans
	BuildDesk	Bert Weevers Nynke Greidanus

In order to get feedback from the market with regard to the EPI SoHo approach all involved countries each set up National Feedback Committees (NFC's).

The NFC's got together during several meetings and at different stages of the project. The projects ongoing results were put forward to the attendees.

By getting together as committees novelties on legislation and practical experiences were shared. The NFC meetings provided valuable information on all issues in the Social Housing sector and created food for thought on the improvement of the method.

The results of these meetings were shared during project meetings between the partners.

To actually integrate the approach in the SHO's national workshops (NW's) were organized by the partners. The workshops were a perfect opportunity to introduce the new way of thinking to an audience consisting of both the management of the social housing organisations and their employees. A lot of effort was put in the dissemination of the approach.

The national workshops were organized during different stages of the project. The overall conclusion was that there is a willingness to make changes in policy and to integrate Energy Performance into the company's structures. The workshops provided the attendees with a foundation helping them to understand, explain and manage the change in policy in their organisation.

In return they also provided feedback for the partners working on the project.

In order to reach a wider national public brochures have been printed. The brochures are produced in the national languages. They provide simple answers to current energy performance

issues like barriers for energy improvement and contain a clear description of the EPI SoHo approach for assessment and embedding.

To involve other Member States from the EU observer countries were invited to attend to the last project meeting. Countries such as the UK, Hungary and the Czech Republic were present. The eastern countries face their own different problems and meeting them gave the partners new insights and ideas. Parts of the EPI SoHo approach could be applicable in these countries. During this last meeting which was hosted by the coordinator in Tilburg; a guided tour along several pilot sites was organized. This turned out to be a great success.



*Photo: Tilburg meeting: partners and observers November 2008*

## 2 Energy Performance and Social Housing Organisations in Europe

### 2.1 Why is energy performance so important for SoHo's?

The core business of the SHO is providing good housing conditions for those who can't obtain them on their own. As concluded: common main targets for European Social Housing Organisations are:

- Controlling or lowering costs of living;
- Providing enough and good quality housing;
- To secure financial and business continuity ;
- Meeting the needs of stakeholders;
- Compliance.

Many of these policy themes are defined by national laws and regulations, and the freedom and scope of policymaking of the SHO will vary per country. But it is important to note that 'energy performance' is connected to *all targets* in every SHO in one way or another. The EPI-SoHo approach finds the best way to establish these connections

In this chapter we will explore the main issues concerning the influence of energy performance on the targets of social housing organisations.

#### 2.1.1 Cost of housing

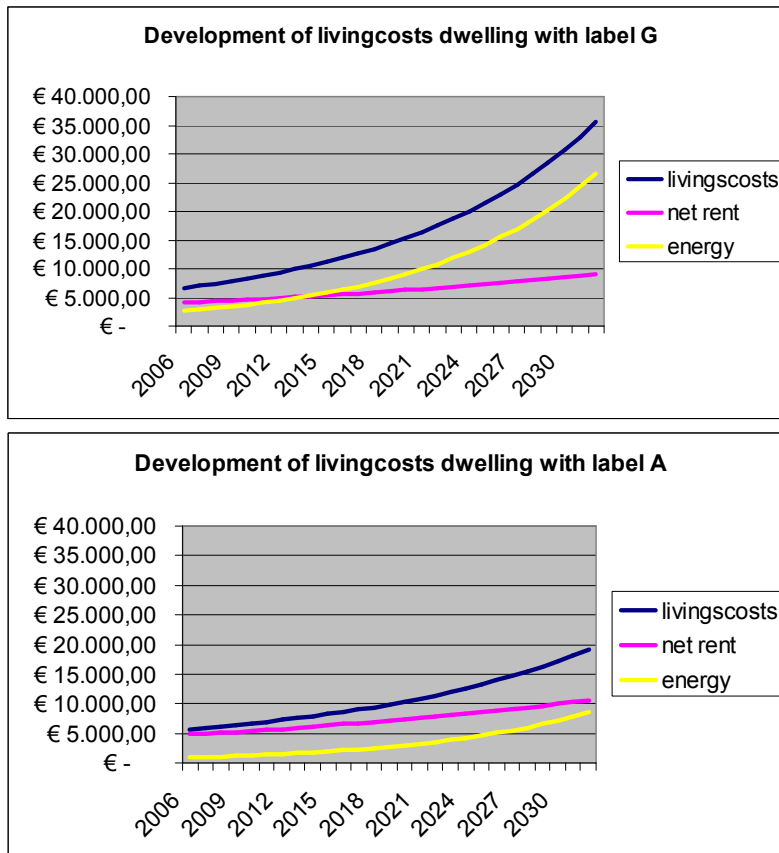
The total cost of housing for the tenant can be itemized as follows:

- a. basic rent
- b. service charges
- c. energy and water costs
- d. triple play (television, telephone and broadband internet)

Sometimes energy and water are included in the service charges.

Related to energy and influenced by the SHO are item a) and b) for as long as they concern building related charges. In the context of this project we will not discuss b) and d).

A general development all over Europe is that energy costs are rising much faster than the basic rental costs. In The Netherlands it is estimated that within 20 years from now the energy bills of social housing will be higher than the net rent. In Italy this is already the case. It is obvious that the poorer the energy performance of a dwelling, the higher the energy costs will be and the stronger these secondary rental costs will increase.



*Figure 2.1: Extrapolation of past price developments in The Netherlands into the future, calculated for a bad energy performance dwelling (label G) and a dwelling with energy label A.*

In The Netherlands the cost of living of a dwelling (terraced house 1964) with a low rent and a bad energy performance (label G) already are higher than the same dwelling refurbished to label A with a higher net rent.

In the future the cost of living of a label G dwelling will increase dramatically. (future development is based on extrapolating the price-development of past 10 years).

This development is even more disastrous when we bear in mind that the people living in the cheapest houses but with the worst energy performance mostly are the people with the lowest income.

*The SHO can affect these secondary living costs by affecting the energy performance of the dwellings.* Although this insight is rather obvious in a theoretical way, most SHOs did not deal with this before today in their every day management practice and strategic policy-making. This 'novelty' requires an approach which is highly effective and efficient in order to make it acceptable.

## 2.1.2 Quality of the building stock

Every building owner, of course, is obliged to meet the national laws and regulations on the technical, energetic and functional quality standards of the building. However, most standards give only prescriptions for *new* buildings. The SHO, in a certain sense, is free to make its own

policies for the *existing* housing stock, of course more or less influenced by the stakeholders' dialogue.

Energy performance is *one* quality aspect, with value on its own but also closely related to other quality aspects like comfort and health. Even safety can be increased by energy saving measures (double glazing). While making management choices on investments in dwellings this energy performance is taken into account together with aspects like technical and functional quality and of course the financial value and market opportunities, aspects normally dealt with in portfolio or asset management. Sometimes there are existing systems of quality performance indicators like scores for the technical condition on which the Energy Index or the Energy Label can be perfectly added. An example is the EPIQR tool used by Bauverein Darmstadt. In other situations where no quantifiable indicators are available yet, the quantifying of the energy performance can be a very good starting point.

In most EPI SoHo pilot projects a benchmark of energy performance has been made, providing information on energetic quality of the building stock. Sometimes it relates to building typology or building year, to get a better understanding.

TBV		EI gem	
A	7	0%	1,04
B	92	2%	1,24
C	965	18%	1,48
D	1382	25%	1,80
E	1513	27%	2,19
F	1154	21%	2,65
G	419	8%	3,20
totaal	5552	100%	2,12 E

TIWOS		EI gem	
A	41	1%	1,10
B	302	5%	1,25
C	1227	19%	1,50
D	1997	32%	1,80
E	1388	22%	2,20
F	902	14%	2,65
G	455	7%	3,20
totaal	6312	100%	2,02 E

WonenBreda		EI gem	
A	0	0%	
B	187	2%	1,25
C	1637	14%	1,50
D	4709	41%	1,80
E	3149	27%	2,18
F	1210	10%	2,61
G	644	6%	3,22
totaal	11536	100%	2,02 E

Tilburg Epa's		EI gem	
A	48	0%	1,09
B	581	2%	1,25
C	3849	16%	1,49
D	8088	35%	1,80
E	6050	26%	2,19
F	3266	14%	2,64
G	1518	6%	3,21
totaal	23400	100%	2,04 E

figure 2.2. Energy labels per social housing organisation in Tilburg.  
 Second column = number of dwellings per energy label;  
 Third column = percentage of total number of dwellings per energylabel  
 Fourth column = EI gem = mean value of energy Index per energylabel

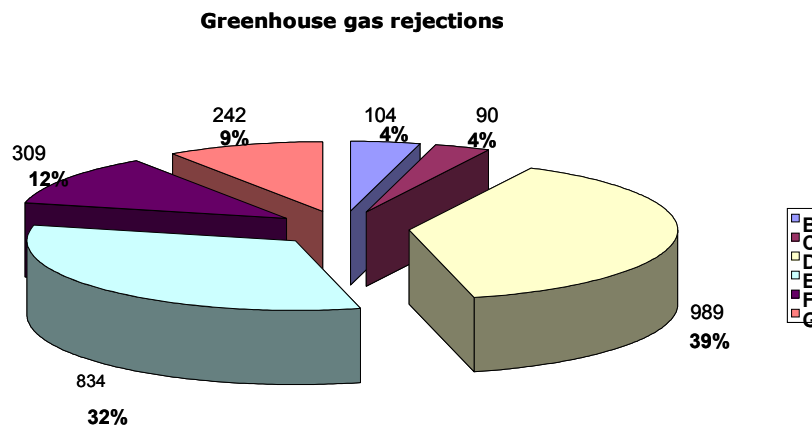


Figure 2.3. Example stock analysis: Greenhouse gas emission in pilot stock of Logirep.

Special attention needs the question in what way quality improvements and energy performance can be converted in higher rents, thus leading to returns on investment for the SHO. This depends on:

- Scoring system (rent depends on scores per quality aspect (The Netherlands), rent based on the ecological rental mirror (Darmstadt), on scores per square meter, ...)
- Approval system for refurbishment by tenants
- Legislation on rent.

The EP data collected by Darmstadt Bauverein not only are used for calculating the primary energy demand, but also for the identification of the specific rents based on the ecological rental table and also for assessing the potentials for rent increases. This is regarded as a particular added value of the EPA execution.

In The Netherlands an additional investigation in the barriers for cost covering rent increase in legislation on the rental system was done by BuildDesk for the EPI SoHo partners and other social housing organisations. The Dutch Government proposed a change in the rent value system in such a way that the energy performance would directly represent value points depending on the label.

The importance of rent increase for the social housing company will be pointed out in the next paragraph.

### 2.1.3 Financial security and business continuity

The trend we see across European SHO's is that they operate more as self-reliant entrepreneurs<sup>1</sup>. This means at least three things:

- the operational management of the *business* must be effective and efficient;
- investment must have payback;
- the real estate value of the housing stock must be taken care of and be secured in the long run.

<sup>1</sup> Asset Management in the Social rented Sector, edited by Vincent Gruis and Nico Nieboer, Kluwer Academic Publishers, 2004.



Real Estate Value forms the financial basis for the existence of the SHO now and in the future. Portfolio Management and Asset Management is getting more important for the SHO every year. This means a permanent challenge for optimisation of the mix of housing quality, price-setting, market demands, costs and benefits, expenditures and income, investments and revenues. The more progressive SHOs have set up systems for portfolio management in which some or all of the above-mentioned items have been integrated. In France it is mandatory to make long term portfolio plans, but these plans often have a mere formal than a strategic meaning.

The Energy Performance is part of this permanent challenge for optimisation. It is part of the housing quality, part of price-setting, (still small) part of market demands, partly a factor within investment policy. But the impact of the EP on Asset Management is getting bigger. This means that the EP of dwellings must be added in, linked with or integrated in the Portfolio Management System.

After the Portfolio Policy is formulated, the strategic choices made must be calculated on tactical and operational levels. In order to achieve operational excellence, the integration of the EP must be 'smooth and easy'. The benefits of dealing with the EP in a sophisticated way must be greater than the effort. This demand of efficiency counts for the preliminary phase of refurbishment (making plans, balancing costs and benefits, designing), for linking on long term maintenance plans as it does for the transaction process (inspection of the void dwelling, actualise the EP certificate, advertisement of the vacant dwelling).

Dutch EP software like EPACT from BuildDesk is designed to perform all of these tasks. The software enables to calculate portfolio analyses and scenario's for energy improvement, on stock level, on complex-level for concrete refurbishment and plans up to dwelling level for close communication with the individual tenant. Web-view applications make outsourcing of EP data management easy<sup>2</sup> while at the same time every housing company employee can find and see the relevant EP results and can print the EP certificate.

Bauverein is integrating the energy related data into the portfolio management via the indicator 'object attraction'.

## 2.1.4 Meeting the needs of stakeholders

The SHO can be regarded as a 'social entrepreneur'. Their concern is not only 'the bricks', but also 'liveability' in a broader sense, including social and healthcare quality, social safety, etc, sometimes extended to schooling and training facilities in certain neighbourhoods. Sustainability is also mentioned in regulations more and more, as an item of growing importance to deal with in SHO management and policy.

Being a social entrepreneur also means that the SHO has to manage a broad stakeholder dialogue. This means transparency, openness and letting the stakeholders see which ambitions are aimed at and what goals have been achieved (accountability). Concerning the worldwide challenge to reduce the Greenhouse Gas Emissions, monitoring of goals and achievements by relevant social partners will be a growing duty for SHO's and formal demand by (local) governments.

The EPI SoHo approach helped Bauverein to evaluate refurbishment activities. The before and after modernisation comparison has shown significant results. Looking at the refurbishment measures of the last 5 years of Bauverein 60% of CO<sub>2</sub> emission could be reduced. Looking at the whole Bauverein stock a continuation of these modernisation activities would lead to 25% CO<sub>2</sub>

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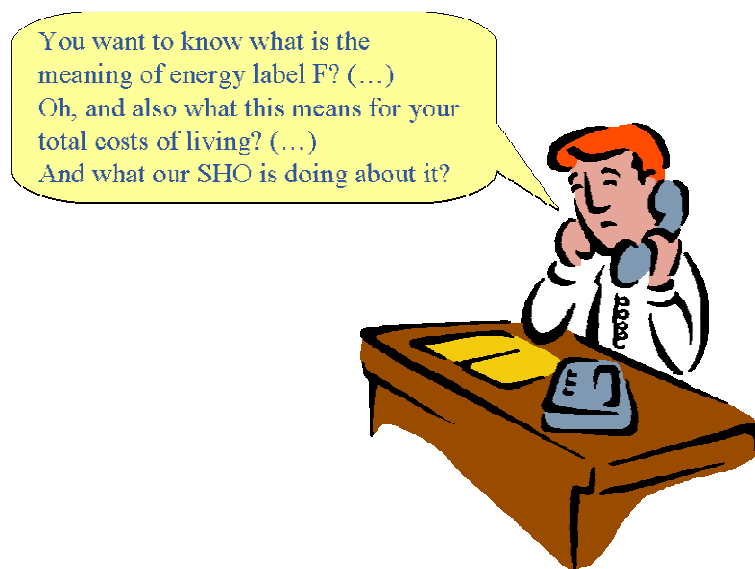
<sup>2</sup> In The Netherlands EP certificates may only be delivered by certified EP companies.



emission reduction. This would be in line with the climate protection goals of the City of Darmstadt.

Transparency is not only important regarding the SHO policies but also for the 'products' of the SHO: the dwelling itself. There is an increase in demand for information: customers want to know what they buy, what they rent. Different Quality Marks have been designed, like the Dutch 'Police Quality Mark' for building safety against burglary. The Energy Label is a quality mark too, which is not only relevant because of the EPBD, but also because it tells something about the secondary living costs which we saw gain importance for tenants. The SHO can pick up this challenge by giving good information about the label and the consequences, thus improving the service to the tenants and improving the relationship with their most important stakeholders.

This means reliable and actual EP data are needed. It also requires a user-friendly system of handling and communication of the EP data and EP certificates (available and applicable information).



*Figure 2.4: SHO back office phone conversation with a curious tenant*

The awareness of the importance of energy performance must be part of the culture of the SHO. The knowledge, skills and communication to tenants about Energy Performance by the SHO employees need to be improved. The EPI SoHo integral model gives all these issues a clear and logical place.

## 2.1.5 Compliance

Legislation on energy performance is most often only applicable on the erection of new buildings. The existing housing stock though is far more relevant for CO<sub>2</sub> reduction and living costs management. In the previous paragraphs we saw that the developments on these fields of social interest are so strong that more and more housing companies just *want* to improve energy performance. Energy policy gets a strategic importance. The EPBD is adding an extra dimension. In the next chapter we will discuss the EPBD.

## 2.2 The Energy Performance of Buildings Directive

### 2.2.1 Backgrounds and aims of the EPBD

The existing building stock in European countries accounts for over 40% of final energy consumption in the European Union (EU) Member States. In December 2002 the European Parliament adopted the EPBD (Energy Performance of Buildings Directive, Directive 2002/91/EC), which has come into effect on January 4 2006. The objective of this directive is to promote, within the European Community, the improvement of the energy performance of buildings by taking cost-effective energy saving measures.

The implementation of the EPBD can play a key role in meeting the EU target in accordance to the Kyoto commitments to reduce CO<sub>2</sub> emissions in an economic way. The EPBD mandates all European Member States to set requirements on energy performance for new buildings and existing large buildings undergoing a major renovation.

The EPBD requires Energy Performance Certificates (EP-certificates) to be issued for both new and existing buildings and to perform regular inspection of heating and air-conditioning equipment. The Member States are committed to apply a methodology to calculate the energy performance. They also have to ensure that qualified or accredited experts carry out the certification in an independent manner.

To stimulate energy efficiency in the built environment the EPBD obliges Member States to:

1. set minimum requirements on the energy performance of new buildings;
2. set minimum requirements on the energy performance of large existing buildings that are subject to major renovation;
3. require energy performance certification of buildings when buildings are constructed, sold or rented out. Furthermore, public buildings over 1000 m<sup>2</sup> useful floor area occupied by public authorities and by organisations providing public services should permanently display the certificate in a clearly visible place;
4. require regular inspection of boilers in buildings (option a), or to ensure the provisions of advice to the users on replacement of boilers (option b). The overall impact of this 'option b' should be equal to the impact of the provisions in 'option a';
5. require regular inspection of air-conditioning systems in buildings.

#### EPBD flow chart for building certification

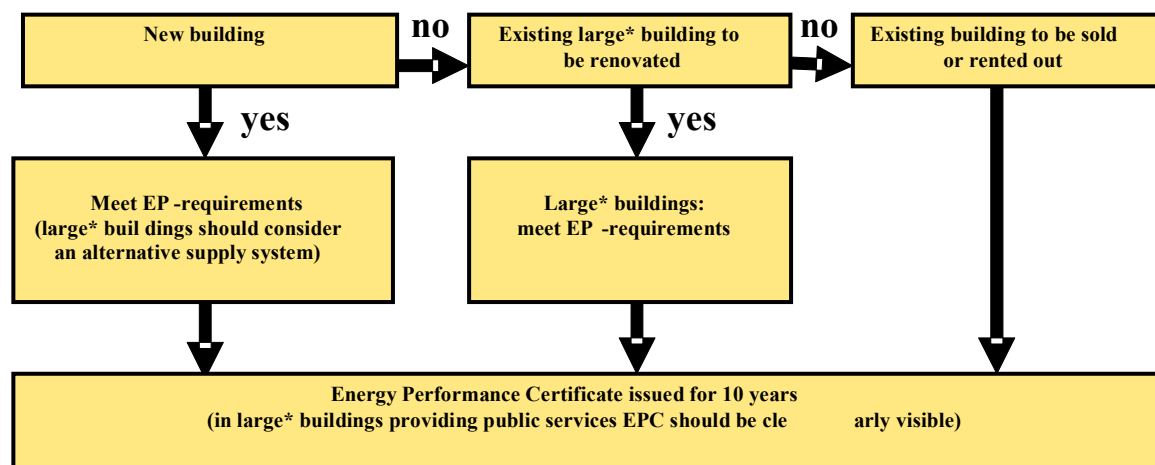
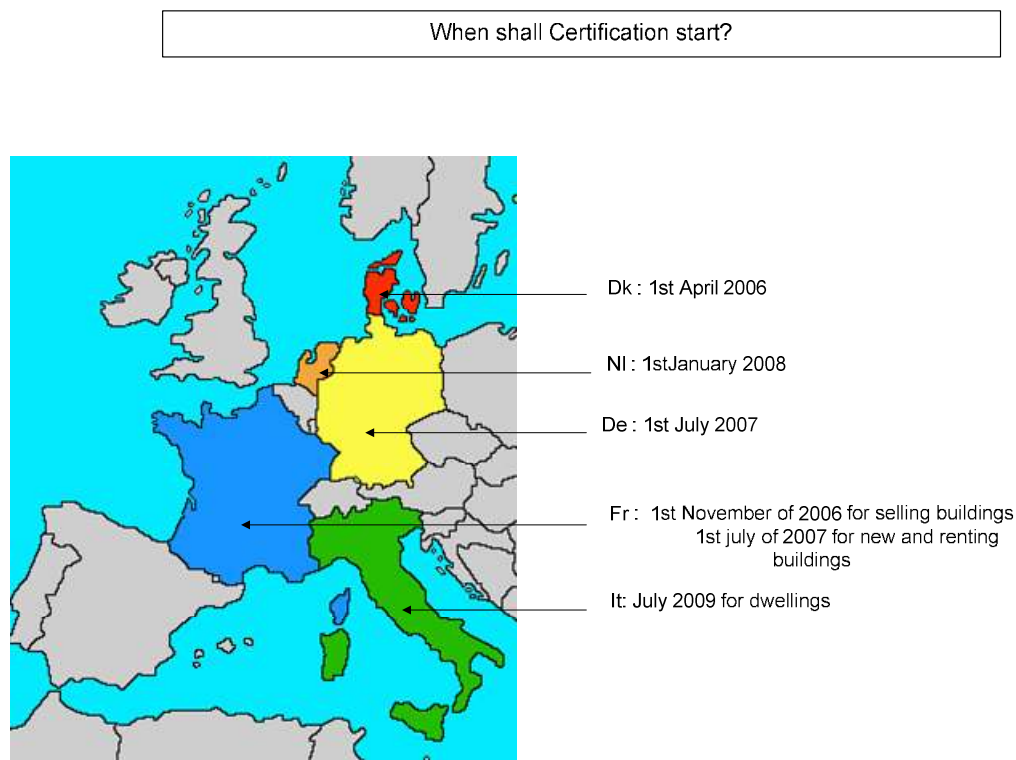


Figure 2.4: EPBD flow chart for building certification

## 2.2.2 National implementation of EPBD

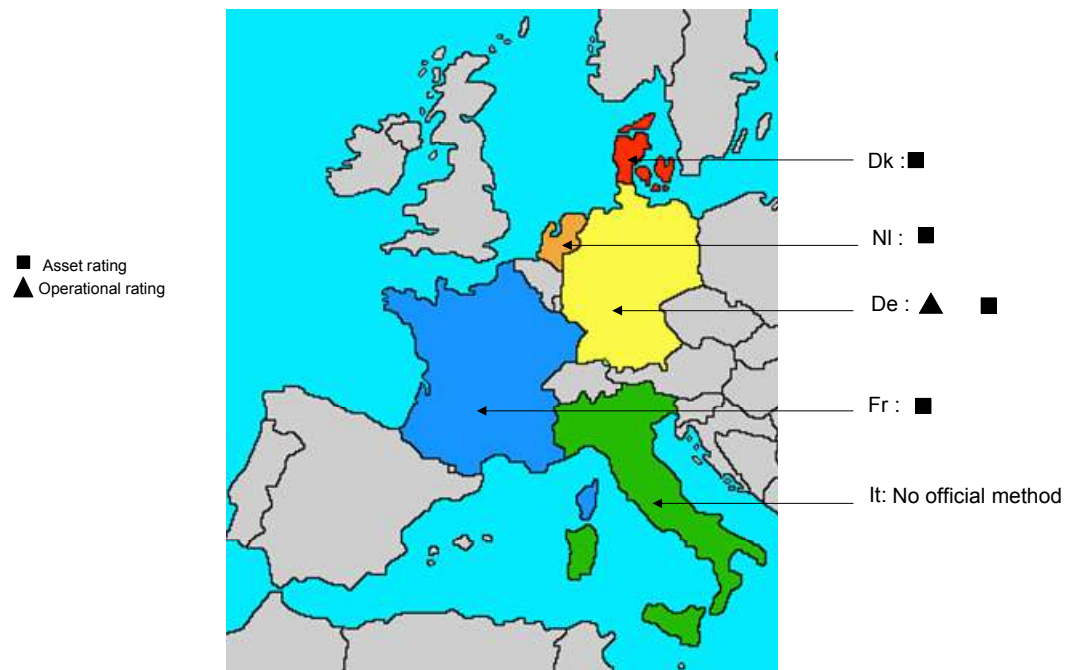
Within the national translation of the Directive in the European Member States important differences occur: like differences in chosen methodologies (asset rating, operating rating), indicators and reference values of Energy Performance (primary energy, final energy, CO<sub>2</sub> ...), tools, implementation date, etc. For the countries participating in the EPI-SoHo project the implementation dates for the certification of buildings vary between April 2006 and July 2009.



*Figure 2.5: Start of certification (source : CSTB)*

Concerning the adoption of a methodology for the energy performance rating of new and existing buildings asset rating (based on calculation demand) is the method that is most often used (for new and existing buildings). Some countries however use operational rating (based on the measured energy consumption) for existing buildings. In the countries participating in the EPI-SoHo project mainly asset rating was chosen as the rating methodology.

# Methodology of calculation



*Figure 2.6: Methodology of certification (source CSTB)*

The following table summarizes the national context of the participating countries concerning the Energy Certificates.

	Type of building	Date of application	Methodology	Indicators
Germany	<b>Selling</b>	1 <sup>st</sup> July 2007	<b>Operational rating or asset rating</b> (> 4 dwellings) <b>Asset rating</b> (< 4 dwellings)	<b>- Primary energy consumptions</b> (kWh/m <sup>2</sup> /year) <b>- Green houses gases emission</b> (CO <sub>2equ</sub> /m <sup>2</sup> a)
	<b>Renting out</b>			
	<b>New</b>		<b>Asset rating</b>	
Denmark	<b>New</b>	1 <sup>st</sup> April 2006	<b>Asset rating</b>	<b>- Primary energy consumptions</b> (kWh/m <sup>2</sup> /year)
	<b>Renting out</b>			
	<b>Selling</b>			
Italy	<b>Existing</b>	July 2007 for large building (>1000 m <sup>2</sup> ) July 2008 for small building (<1000 m <sup>2</sup> ) July 2009 for dwellings	No official method.  Implementation framework will be approved in 2008.	<b>- Primary energy consumptions</b> (kWh/m <sup>2</sup> /year)
	<b>New</b>	EPA is required since 2007. EC has not yet been introduced.		
Netherlands	<b>Renting out</b>	1/1/2008 and one extra year for SHO's	<b>Asset rating</b>	<b>- Energy Performance Index</b> + Primary energy consumption (MJ /m <sup>2</sup> /year)
	<b>Selling</b>			
	<b>New</b>			
France	<b>Renting out</b>	1 <sup>st</sup> July 2007	<b>Asset and operational rating</b> (building prior to 1948)	<b>- Primary energy consumptions</b> (kWh EP/m <sup>2</sup> /year) <b>- Green houses gases emission</b> CO <sub>2equ</sub> /m <sup>2</sup> /year
	<b>Selling</b>	1 <sup>st</sup> November 2006	<b>Asset rating and operational rating</b>	
	<b>New</b>	1 <sup>st</sup> July 2007	<b>Asset rating</b>	

### 2.2.3 Asset or operational rating?

Asset rating provides much more data about the building, and is therefore more useful for other purposes like energy efficiency policymaking within social housing organisations.

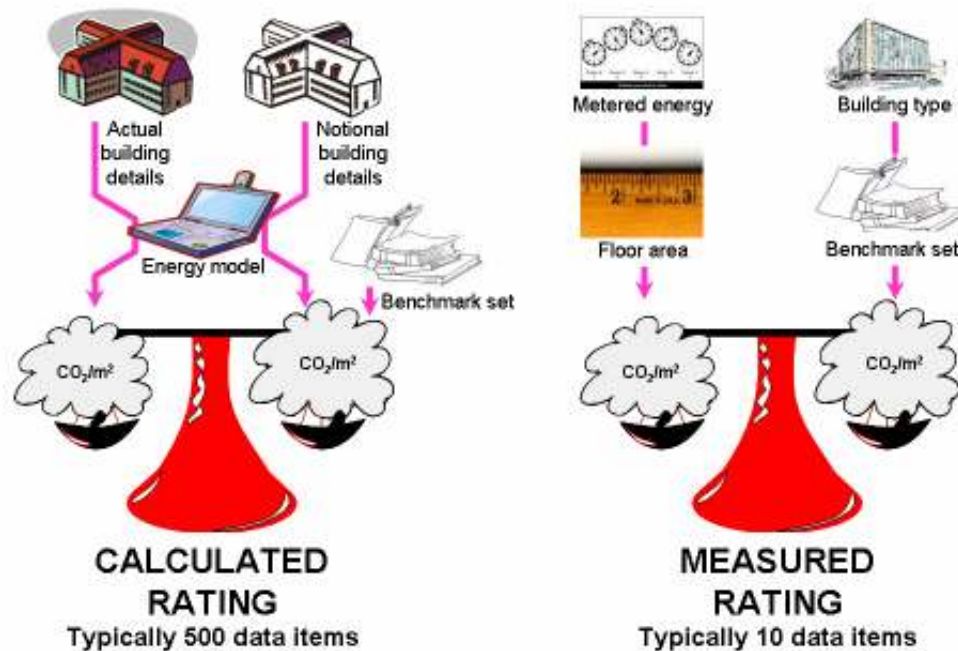


Figure 2.7: Methods of rating (source CSTB)

The strengths of Energy Certificates based on the operational rating are:

The operating expense is reduced. In Germany for example the certificate might be delivered by energy suppliers in combination with the service of calculation the heating costs for tenants. For tenants the heating costs are relevant. These costs are directly connected to the operational rating shown in the EC. The EC gives feedback on the behaviour of tenants and might motivate them to save energy.

Energy Certificates based on operational rating have some essential disadvantages:

In principle the approach is only possible for buildings with central heating systems. For multi-family-houses with individual heating systems the values are usually not available.

Energy saving measures can influence the assessment of the building in the EC earliest after a few years of measuring the (reduced) consumption. In consequence the motivation to invest in energy saving measures might be reduced.

The energy demand also corresponds to individual behaviour. Therefore the assessment of the energy efficiency of the building is estimation. In fact the larger the buildings are the more irrelevant the effect. Long-term vacancies are problematic for operational rating.

A qualified assessment of energy saving measures with recommendations is not possible if it is based on operational rating only: without the in situ description of the energetic characteristics of the building. External embedding as part of cooperation management is not supported.

The data of ECs based on operational rating provide hardly any additional information about the energetic quality of the building. The energy balance of the building cannot be calculated, recommendations for energy saving measures cannot be optimized. In short: there is hardly any

connection between ECs and the decisive process in housing companies. An internal embedding of additional energetic information is not possible.

Energy certificate based on...	asset rating	operational rating
independence from user behaviour	+	- / O *)
costs	-	+
measures / recommendations	+	-
correlation with heating costs	O / + *)	+
*) depends on (small) detached house or (large) multi-family-house		

*Figure 2.8: Advantages and disadvantages of EC's based on asset or operational rating*

**These arguments convinced all participating EPI SoHo housing companies to use the asset rating system, even when operational rating was legally allowed.**

In some cases also additional data were collected on top of the legal requirements (Germany, Italy).

## 2.2.4 EPI-SoHo and EP calculation-tools

The outcome of the EPI-SoHo project is *not* a software tool for EP-certification or EP-Advice reports, but a *method* in which national EP-tools can be used (accommodating national tools) and can be fully effective, in the broader scope discussed.

On the other hand is EPI SoHo setting a *standard* for EP-calculation-tools. The EP calculation tools must meet the requirements of the SHO in using EP certificates, EP data and EP calculation results in their strategic, tactical and operational processes!

The basic idea of “empowering” the energy certificate data (which are to be assessed anyway to comply with the EPBD) in order to serve the goals of the SHO, stands firmly. However, the way the national EPBD-legislation is set up, sometimes leads to discussion now that more practical experiences are known. The operational rating method is not suitable for strategic asset management in professional real estate companies (France and Germany).

In case the national EPBD regulations allow operational rating for Energy Certificates, only few data on the building specifications will be collected. This will not provide enough data to calculate scenarios on improvement of the energy performance of houses. In the EPI SoHo project the German partners started to develop a quick assessment method based on building typologies to collect the extra data needed for embedding requirements of the SHO.



In the Netherlands a labelling system might be more useful if presented as a CO2-indicator. The Tilburg partners aim at CO2 neutrality before 2050. The Tilburg partners sent a letter with recommendations about the label system to the Ministry of Housing.

## 2.3 Energy performance and SHO processes

### 2.3.1 Energy: an extra issue for Social Housing Organisations?

For Social Housing Organisations (SHOs) the mandatory energy certifications of houses leased out represent a great challenge. The EPBD obliges housing companies to collect a certain number of energy performance data depending on the national legislation (a “must” for SHO’s).

‘Energy’ of course is not the only concern of the SHO. Other and sometimes more urgent issues are: city renewal, liveability in socially weak districts, integration of different racial communities, poor quality of housing, insufficient finances, affordable costs of living for the tenants, mergers or other problems concerning internal organisation, communication with stakeholders, public support, licenses to operate and so on.

Our firm belief is that on the long term ‘energy’ must not be treated as a new, extra management issue, but as an integrated part of everyday business. In particular the connection with cost of living, the quality of the building stock and real estate values are becoming more and more evident because of the increasing impact of energy performance for these main management issues. We discussed this in the previous paragraphs. These issues are joined in the portfolio management of the SHO therefore this major aspect which will be further investigated in the following chapters.

This does not implicate that ‘energy’ doesn’t need extra attention of management. On the contrary: especially in the first period of embedding directors and management have to carefully assess *what* they want and *how* these goals can best be obtained. Sometimes deep investigation into standard procedures and functions is necessary to find the best way of embedding. A side effect could well be a redefinition of the company’s organisation.

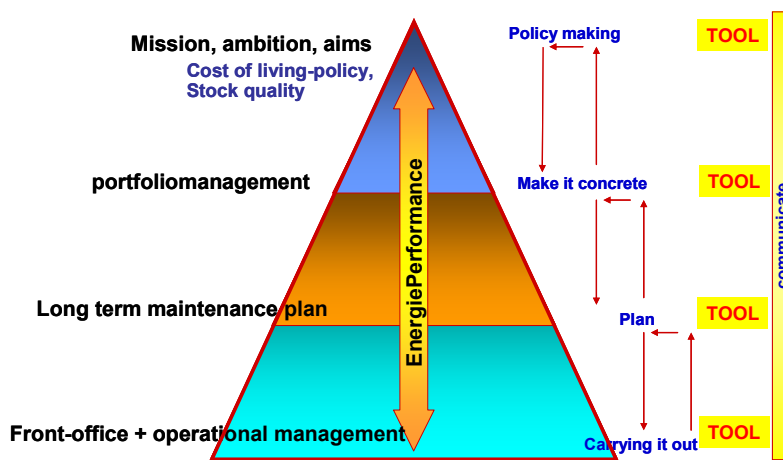
Often even a special energy or sustainability department or persons will be installed (like in SCIF and Logirep) to start up this new field of housing policy.

Almost every EPI SoHo partner discovered that just the mere fact of assessing building data was a driver for internal awareness and actions on portfolio management.

### 2.3.2 Integration in management and decisive processes.

As energy is influencing every policy target, it must be integrated in (almost) every process of the social housing organisation, on every level.





*Figure 2.9: Energy performance in SHO's organisation*

On these levels the common processes in every European SHO are:

1. Normative policy making process
  - Mission – vision – business plan – targets – strategy. Top level of SHO: director's board, company's board of commissioners / supervisory board.
2. Process of portfolio and Asset Management
  - Portfolio management: investment policy, performance analysis portfolio, investment scheme. Real Estate Director and Management Team.
  - Asset management. Performance analysis of estates, marketing policy, relation management / stakeholder's management, long term investment and maintenance scheme on estate-level, organisation / outsourcing. Management Team, Real Estate department.
3. Process of planned maintenance
  - Inspection / assessment – calculate – decide – plan – prepare and organise – communicate - execute – deliverance - administrative handling.
4. Process of Refurbishment
  - Inspection / assessment – guidelines from strategic asset management plans – consultation with tenants - calculate – decide – plan – prepare - execute – deliverance - administrative handling
5. Daily rental process
  - Transfer / turnover process. Announcement lease termination by tenant – administrative handling - inspection of the vacant dwelling – repair or improve – determine rent – advertise – allocate & contract – guidance and instruction of new tenant.
  - Complaints and wishes process. administrative handling - inspection of the dwelling – repair or improve – determine rent – guidance and instruction about new situation.
6. Data management process
  - All actions are based on and administrated in data systems. Energy Performance demands to be integrated.

The philosophy of EPI SoHo is that energy must be embedded in each process, to be able to make real energy improvements in the housing stock.

### 2.3.3 Portfolio management as an example

When we take a more detailed look into the portfolio management it is obvious again that energy is having a deep impact on the distinct aspects.

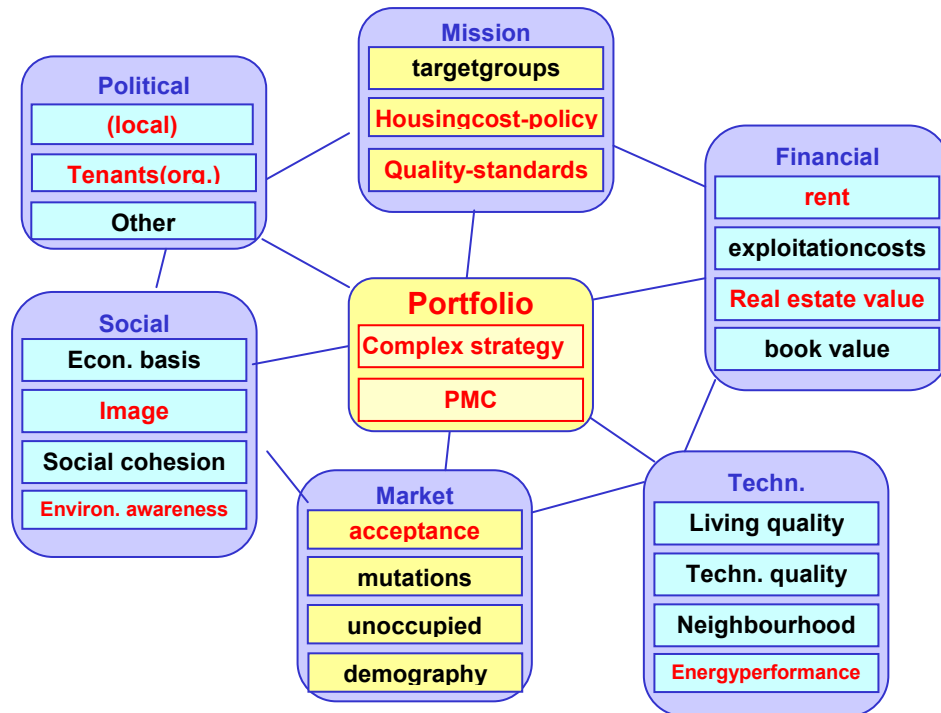


Figure 2.10: aspects defining portfolio management in social housing; energy aspects are highlighted in red.

The assessment of EP data revealed new insights. For instance to Logirep:



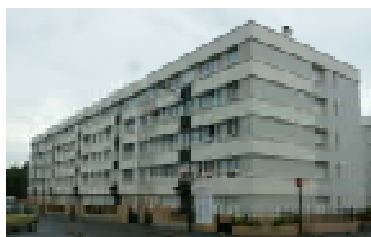
### Examples of very energy consumers sites



#### Sarcelles « les Chardonnerettes »

84 houses:

- 77 houses graded « E »
- 7 houses graded « F »



#### Argenteuil « La Coudraie »

242 dwellings graded « E »

## 3 The EPI-SoHo approach

### 3.1 Add value to the EPBD

#### 3.1.1 Integral approach

The implementation of the EPBD and – even more important – the realisation of energy saving by Social Housing Organisations (SHOs) can only be successful if there is a balance between the costs and benefits (including added value for social housing management) and a closed quality circle to keep data and certificates up to date.

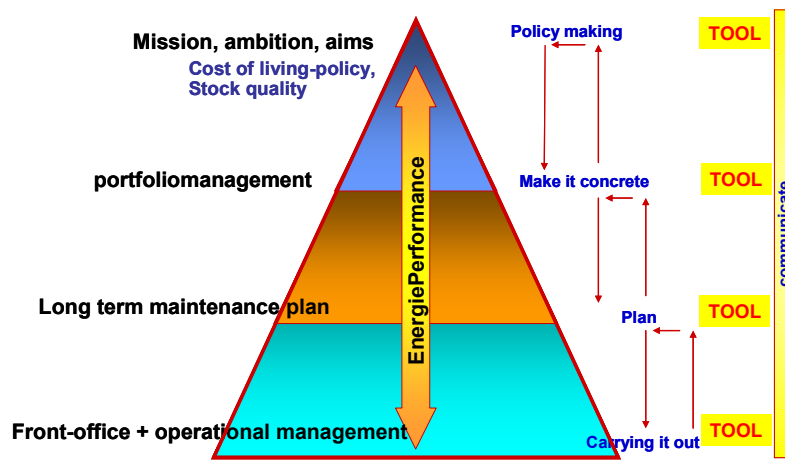
The EPI-SoHo approach is designed to support the implementation of the EPBD within SHOs by providing a cost effective large scale energy assessment method. At the same time it supports energy saving in SHOs by providing an effective approach for embedding energy assessment data into policy processes such as portfolio management. This way the data that has to be assessed for the purpose of the mandatory energy certificates (a labour intensive process) is made available and useful for the integration of energy in housing stock management.

The end-result of the EPI-SoHo approach is the complete integration of energy-aspects on every policy level within SHO's. In the previous chapter we saw energy affecting every policy target and every process within the SHO: In order to achieve success the EPI-SoHo approach has to be applied to all general organisational structures within SHOs.

At *normative* level the SHO defines the policy objectives, based on global analyses, monitoring and evaluation systems and scenario-calculations. Strategic goals for issues like living costs (social objective), portfolio management and sustainability are set. Regarding 'energy' it can be worked out as quantified targets for an average EP indication of the housing stock, a yearly reduction of a certain percentage or kilotons of greenhouse gasses, a reduction of secondary costs of living for (some of) the tenants, etc..

At *strategic* level these global objectives are translated in specified plans for the midterm future on housing-complex level: exploitation strategies for groups of buildings (asset management), long-term maintenance and investment plans. Based on inspection-results, market analyses and financial calculations (quality control circle) energy saving measures are linked to other quality improvement measures and maintenance activities, so that through cost-sharing their effectiveness can be enhanced.

At *operational* level every employee dealing with customers and is practically involved with the process of transfer, maintenance or refurbishment has to deal with the Energy Certificate. Sometimes this involvement concerns technical reasons (a vacant dwelling needs energy saving measures, but which?) sometimes this involvement concerns certain needs or questions from the tenant or possible new tenants seeking housing.

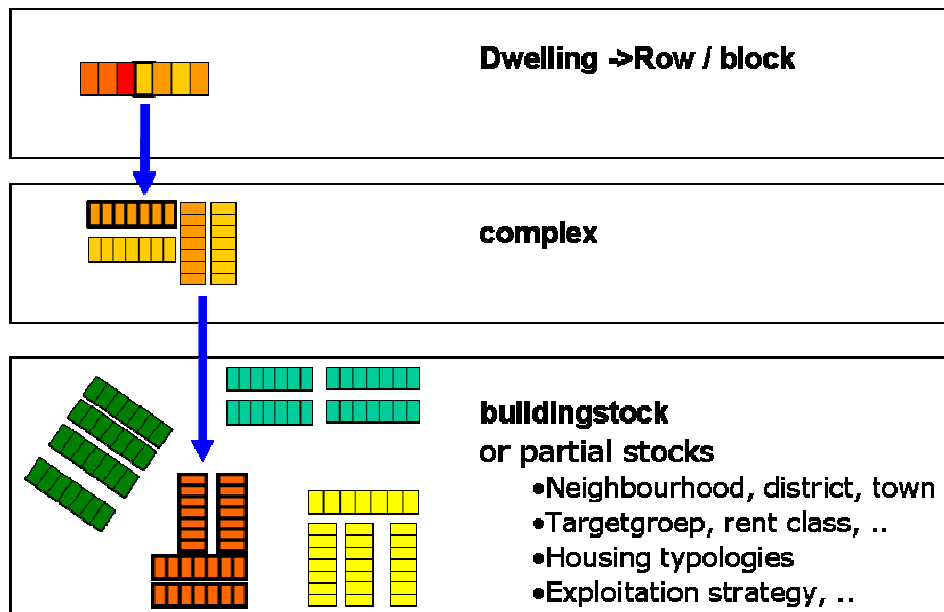


*Figure 3.1. Energy Performance is relevant on every level in the SHO:*

On every level there is a need for sound and actual data, various possibilities of calculations and reports, on several aggregated levels, easy to perform, and easy to access and to maintain. It is important to notice that the EP data information flows from both top down (policy / targets) and bottom up (monitoring / evaluation) in the company structure.

### 3.1.2 Aggregation levels

The EPBD basically obliges the SHO to make EP certificates on the dwelling or building level. This is the right level for a transfer moment, or on request from a single occupying tenant. When talking about refurbishment, one needs aggregated information on (multiple) building or block level. For portfolio analyses one needs even higher aggregation levels, and more information like: geographical, administrative, strategical (product-market combinations, target group, rent classes) and technical (housing typologies, building years) information.

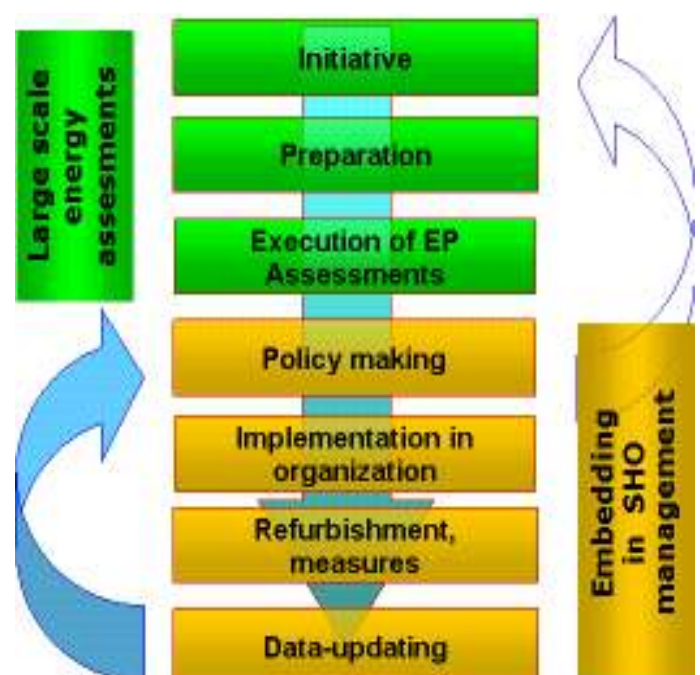


*Figure 3.2. Aggregation levels*

This view on using building data is not only profitable for the field of energy, but can be applied to other policy fields as well.

### 3.2 The EPI-SoHo process approach

The EPI-SoHo approach consists of two main phases: the assessment phase (here in green) and the embedding phase (in yellow). Both phases are inextricably linked and are divided in logical steps, together forming the EPI-SoHo process approach.



*Figure 3.3. EPI SoHo approach*

### 3.2.1 Assessment

The assessment phase of the EPI-SoHo approach consists of three steps;

1. The initiative, 2. The preparation and 3. The execution of Energy performance Assessments.

#### *Initiative*

The process starts when the management decides that the SHO needs to do 'something with energy'. Besides EPBD legislation more and more environmental and socio-financial arguments are important drivers. In fact these aspects are part of policy making, the first step of 'embedding'. Information about pros and cons of EP and the need for RUE and RES will be gathered and the formulation of opinions about embedding starts.

Based on these views and expectations the SHO decides on the framework and requirements for the Energy Performance Assessment project which is why in the scheme the big light blue arrow is pointing from the embedding phase to the assessment phase. Working out the SHO's further policy is only possible when reliable data are at hand.

#### *Preparation*

After the Initiative the project "preparation" is at hand. This step can contain the following actions: formulate the quality protocol for the assessments, choose the appropriate tool, select and contract assessment-firms, possibly train own staff, set up work plans based on portfolio diagnosis, put up the project organisation, design a communication plan, both for internal use as for external use (i.e. tenants!).

#### *Execution of EP-assessments*

The step of "execution" means to collect data through an inventory of basic data from drawings and other sources within the SHO. Inspection of the buildings 'in the field' by using the inspection and quality protocol can provide further information. This data need to be processed in the chosen EP-tool. A calculation of the current situation and possible packages of measures can be made as well as the production of EP certificates, EP advice reports. A data-management system/database with energy performance data has to be set up which can be used for policy purposes.

As we saw in the previous chapter it is important to use an *asset rating* EP-method.

***In the EPI SoHo pilot projects only a small part of the stock needed an EP assessment. Before the end of the project every participating SHO decided to assess the whole building stock.***

### 3.2.2 Embedding

The last four steps of the EPI-SoHo process concern the *embedding* of energy in social housing organisations. We saw that 'energy' is affecting almost every aspect of the SHO organisation. This means that integrating the energy theme is a complex task which can only be achieved if a logical process approach is followed.

#### *Policy making*

The first step of the embedding phase is "policy making". Now stock data are available abstract policy aims can be turned into concrete, realistic, smart goals.

In this step the current quality of the housing stock is analysed, scenario-calculations for different ambition levels (based on indicators) are executed and related to strategic stock policy. By taking this step insight is provided in the housing stock and in the consequences of different ambition levels and policy targets. Points of departure for policy making are formulated and reconsidered. This step leads to an approach to embed energy.

To support policy making within SHO's a list of indicators is provided to help them in determining which elements they want to aim for in their housing stock management. Examples of relevant indicators are; living costs for tenants, costs for energy consumption, the part of total rent spent on energy, carbon-dioxide reduction, the part of renewable energy within the total energy use, profitability of measures (based on payback time), etc.

In order to make the right decisions in policy making the management will need stock analyses and scenario calculations.

Stock analyses will show what the average energy performance is, which are the main variations, what relationships can be found between rental classifications, income groups and household types, neighbourhoods. This provides a basis for defining the attention fields in policy making.

The next step is to examine the possibilities for improvement. What will be the costs (and benefits) if the SHO is striving for an average EP of 'x' for the building stock, what if the SHO wants to diminish the energy costs for the tenants with 30 %, what if ....?

*Eg: 2008: Logirep Board of Directors start Environment Actions Plan (Fr).*

*2009: Integration of energy efficiency in the portfolio management.;*

#### *Implementation in organisation*

The next step is the "implementation in organisation" of the embedding approach. In this step the realisation of the policy targets is arranged by evaluating and adjusting processes, procedures and functions within the organisation. Attention is paid to internal communication and training, a management organisation is arranged for, with management instruments and integrated data management systems. The result of this step is a SHO manage and use energy performance data effectively.

*Eg: 2007/2008: TBV Wonen implements system for management, quality control and updating of EP-data and deliverance of certificates to the tenants.*

*Logirep: Interdepartmental Workshops on sustainability to increase awareness.*

#### *Refurbishment measures*

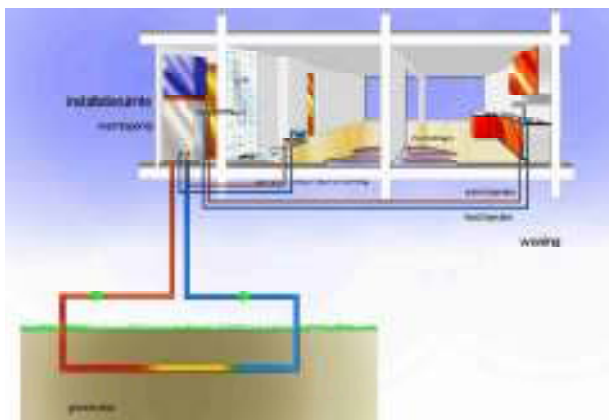
This third step of the embedding phase is executing "refurbishment measures", or the realization of energy saving measures. Based on policy targets and with the assistance of the new organisational possibilities, energy saving investments can be optimised and tenants can be provided effectively with service and information. This step will result in better energy performance of the housing stock, reduced living costs for tenants and environmental improvements.

*Eg Logirep: Multi-year planning of thermal refurbishment operations considered as priorities.*

#### *Data-updating and evaluation*

The last step is “data-updating and evaluation”. The executed improvements within major and periodic refurbishment and individual measures are processed in the energy performance database system. The effects of the improvements are calculated and checked. The policy, processes and tools are evaluated. Based on this update new current energy performance certificates can be made available. This step provides input for new policy making and broadening the scope of energy policy.

### **Sustainable Energy Sytem Theresia’s Rozen**



*Figure: WonenBregburg (NL) started with new sustainable energy systems in housing projects.*

### **3.2.3 Flexible use and learning loop**

By presenting this process diagram, we are not claiming that the SHO must always exactly follow this order of the phases for all actions. Certainly one can realize RUE and RES measures in a dwelling or a building without having to wait for a total stock energy assessment, or an overall energy policy or portfolio policy for example. We saw some SHO's in EPI SoHo organising data management and updating EPs and fulfilling EPBD compliance before policy making was fully implemented. In fact the SHO skipped the embedding phase on one aspect. This first 'round' was easy to manage, provided learning moments and ensured more reliable data to be used in the next rounds of policy making etc.

The EPI SoHo conclusion is that working with the right, actual data is necessary for the right decision making policies, and that the existence of a well considered strategic policy helps to make the right decisions on tactical and operational level and helps streamline the SHO processes and stakeholder-dialogues.

Every participating SHO decided to assess the whole building stock.

In local collaboration between SHO, local authorities and tenant organisations the availability of stock data, calculated effects of strategic portfolio choices will make it easier to communicate and negotiate. Though the interests of the different stakeholders may vary, everybody can see the real facts so a shared, common vision will come into reach.



The last 4 phases form the necessary closed quality circle for a structural approach for embedding Energy Performance, RUE and RES in the SHO are being described here under. We are using the principles of the PDCA Deming-circle:

- **Act:** based on analysing the outcome of the assessment and data-updating define (or redefine) strategic goals and objectives (*policy making*)
- **Plan:** based on strategic portfolio policy, refurbishment plans and measures are set out in mid- and long-term investment and maintenance plans, and seek 'natural moments' to create cost-effectiveness (*implementation in organisation*).
- **Do:** realize RUE and RES in daily rental and management processes and refurbishment projects (*refurbishment measures*).
- **Check:** the technical changes that have been made in the housing stock must be administrated, including of course the EP-data. Based on the updated EP data the management can evaluate its policy and outcome (*data updating and evaluation*), leading to policy adjustments or **acts** on new fields of policy.

Thus every loop of embedding can be seen as a learning loop. If one is aware of this opportunity the quality and impact of SHO actions can be improved every time, each time adding complexity until every energy aspect is fully integrated in the organisation.

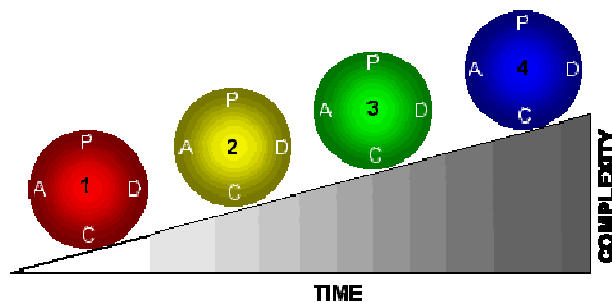


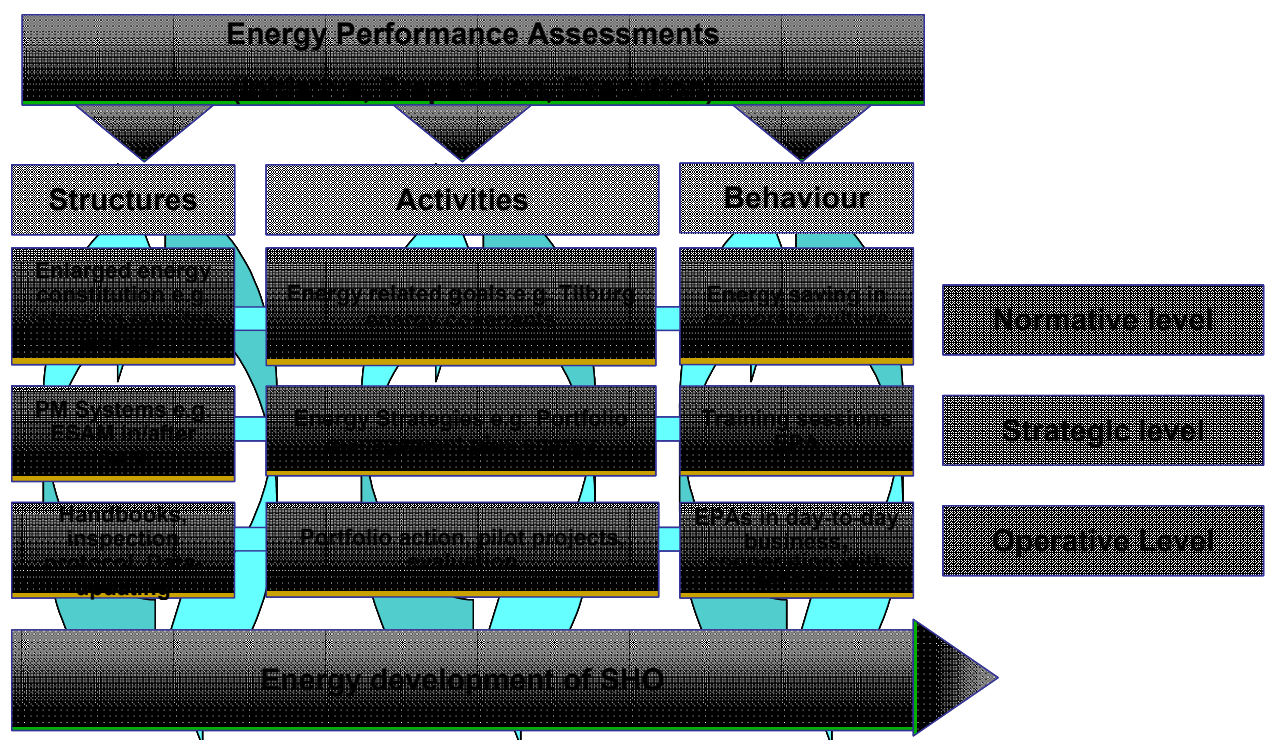
Figure 3.4. After every loop of the Deming circle quality improves and more complexity is tackled.

The process approach in itself does not specify which aspects of the SHO organisation should be taken into account. That is why an integral management model is developed as well.

### 3.3 Management model

A management model has been developed besides the general EPI-SoHo process approach to support the embedding of energy.

In chapter two we saw that energy has to be 'anchored' to all three levels in the organisation and to all main processes within the organisation. The management model provides a structure for the integration of energy within the different policy levels. The model is based on the St. Gallen Management Model, which provides insight in the critical factors for success and their coherence within integral change processes.



*Figure 3.5: St. Gallen management model:*

The first dimension three *horizontal levels* are defined as normative, strategic and operational management. On the normative level the goals of the company are specified. This level is concerned by external influences like regulations and other stakeholder requirements. On the strategic level the guidelines from the normative level are further concretised and on the operative level the ideas of both the superior levels will be carried out.

The second dimension contains three *vertical pillars* marking structures, activities and behaviour of a company. The central pillar of 'activities' contains the policy making, the strategic programmes and the operative business of a company. The left pillar deals with 'structures' of a company e.g. the implementation of a management system or the organisational structure. The pillar of 'behaviour' concerns on normative level the corporate culture, on strategic level the capacity for problem solving and on operative level the concrete job performance and cooperation skills of the members of the organisation.

The development of a company over time can be interpreted as third dynamic dimension of the approach.

The harmonisation of the modules within the respective dimension is a precondition for a successful management. The internal harmonisation occurs in three steps: within one module, on horizontal level and vertically within one pillar.

The EPI-SoHo process approach and the management model are complementary and can be used together. The results of the first three steps of the process structure (assessment phase) are input for the embedding phase. The management model provides a more detailed aim for the embedding phase that is described in the last four steps of the process structure.

EPI-SoHo work package 6 focuses on collaborative structures between local authorities, social housing associations and other market parties. Report 6.1 *"Methodology for successful co-operation between the public- and private sector"* describes the method of developing a covenant on energy saving, energy efficiency and carbon dioxide reduction ambitions on a local level (municipality).

Within the EPI-SoHo project a specific collaboration process, concerning concrete energy-efficiency measures for immediate implementation in the Municipality of Tilburg (the Netherlands), has been followed as an example case study. This collaboration process resulted in the third energy covenant in Tilburg, which will last until 2010. In the period from 2001 up until 2005 two former energy covenants have already been established successfully. The results of the experiences in the Netherlands have been disseminated in the Netherlands, Germany, France and Italy and possibilities c.q. limitations for collaborative structures in these countries have been identified.

## 4 Energy covenants

How to make ideas and ambition work when energy, sustainability and environmental issues become part of the policy agenda? In general, two types of instruments are most likely to be worked with: Legislative systems (by force) and voluntary systems (by commitment).

*Working and achieving sustainable ambitions and targets on different levels of the built environment on a municipal scale, can only be possible if the urban government and private enterprises formulate their ambitions and objectives and execute them in an organized way.*

This is the key to successful collaborations in ambitious projects in general but certainly if targets are related to energy efficiency issues. Energy Covenants can be very helpful because covenants facilitate both common and individual interests. Voluntary commitment is preceded by the question: What's in for me, and what is the added value of working together? The answer is often the same in different cases: Collaboration with several authoritative partners provides significant results and continuity.

Covenants do not have legal status and are not binding agreements. Covenants are used very often as complementary agreements next to the official legislations in cases where multiple parties are needed to achieve social or special societal aims. Energy covenants, or more often sustainable building covenants, between local administrations and social housing associations are obvious choices. Besides solely energy issues, they share more common interests like visions on (social) housing, sustainability and societal responsibility.

Within the EPI-SoHo project the City of Tilburg (the Netherlands) is very experienced in these kinds of collaborative forms. Together with all local social housing associations, they work steadily and continuously on energy saving targets. All parties benefit from this collaboration: the city council benefits in the progress and results concerning their general environmental policy targets and the social housing associations are able to realize their targets tailor made, depending on their specific organizational needs and policy strategies. All parties profit from exchange of knowledge, experience and last but not least: cost sharing.

This is exactly the function and position of the energy covenant in the EPI-SoHo approach and methodology. It facilitates all parties involved, enabling giant leaps in energy saving, sustainable development and the quality of social housing. A successful covenant works as a catalyst and leads to new sustainable initiatives and concrete actions.



Photo: Signature of the new Covenant of Tilburg (Feb. 2006) *Courtesy of M. P. Biemans*

## Taking initiatives towards energy covenants

The focus of attention as stated below should help to raise the awareness of parties involved, in particular social housing associations and municipal bodies, who want to set up collaborative structures with energy covenants. Always check the current situation: what does already exist or is in the process of coming into existence however without having yet reached a formalized status.

- Has there been any "initiative" or existing frameworks in the field of energy issues so far? Think about environmental policy plans of municipal housing visions. The initiative could come from various actors, i. e. local politicians, administrators, NGOs etc. Or from external events, i. e. a new law (EPBD), financing programmes etc. These initiatives or running businesses are often a good lead to intensify collaborative structures.
- Who are the key persons that push(ed) or can push an energy related initiative? I.e city aldermen or CEO's of important stakeholders
- What are the topics and targets of such initiatives? "More prosperity with less energy" , "converting policy into action (pay off IEEA)"
- Does the initiative correspond to any form of document? Are the documents of any binding character or just intentions? (i.e. environmental policy plan, social housing policy plan)
- Is there any binding political will behind the initiative, such as City Council decisions, decision of any other body, etc.?
- Is there any monitoring on the implementation of the initiative? Think of progress reports, steering group minutes etc.
- Is there any particular funding for the initiative? Or are the involved parties willing to fund? In many cases, the local city administration can put up a grant fund for special actions (improve energy efficiency actions or energy performance certification)
- Do you have a leading, enthusiastic and charismatic leader who is willing to support the initiative as anchorman? And are there enough qualified human resources to build up the team for a longer period? (continuity of staff is a critical success factor)
- Do all parties benefits form the initiative? "What's in for me" is very basic but nevertheless critical in binding different parties for longer periods. The profits can be financial (grants, cost sharing), positive marketing/public relations ("green" image, Corporate Social Responsibility image).

### 4.1. Preconditions for successful collaborative structures

There are some preconditions and keys which are essential for setting up and achieve successful collaborations in energy covenants.

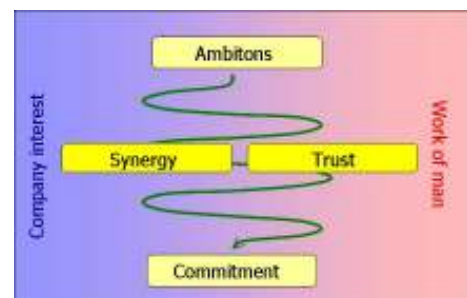
- **Vision:** Make sure there is an attractive futuristic idea which everyone is willing to work on even if you are knowing the ways to be followed in advance. A brilliant vision is naturally adapted by all stakeholders and staff on all organizational levels.
- **Animation, Inspiration and enthusiasm:** Engaged leaders are necessary to put issues on agenda's and to take the first steps. Ensure there are incentives which inspire; Follow the great and shining examples and create new ones. Innovation generates variety and enthusiasm.

- **Ambition:** Dare to set great ambitions and targets; Think globally, act locally is very much applicable in working with Energy Covenants;
- **Involvement and commitment:** Assure yourself of sincere and genuine commitment and involvement by all collaborating parties and people; Only then success can be achieved;
- **Trust and faith:** All parties have to trust each other without having hidden agenda's. This means that one has to be prepared to invest in the relationships through a proactive attitude with a focus on concrete results. Be responsible and trustworthy.
- **Share knowledge and experience:** Don't keep your knowledge and experience for you own sake. Share it widely, before it is lost and let others learn from your mistakes
- **Good staff and project team:** Developing and executing energy covenants is, above all, work of man; surround yourself with good skilled staff and project teams
- **Patience:** Success follows the way of gradualism; be aware to start small and intensify and extend after a while; Successful covenants are always long-lasting routes.
- **Excellent management:** Success stands and falls with excellent leadership. Make sure there is an inspiring management team who is leading and managing the covenants' process. Changing chairmanship during the covenants period keeps all parties motivated and provides a sustainable bond;
- **Celebrating successes:** Dare to celebrate your success when milestones are reached, how ever small they might be. It is the reward for hard work and faith in the journey to a sustainable future. On the other hand, dare to recognize your mistakes and most importantly learn from them.

## 4.2. The process of energetic collaborations

Examining the factors that determine why an initiative or project idea can be realized successfully offers opportunities to understand the underlying process and then steer the project in the right direction or recognize on time that it is not feasible to continue a process.

Within the EPI-SoHo project we therefore examined the critical cooperation factors, their influence on the success of collaboration projects and the means that are available to control this process, like different participating people and the role they play.



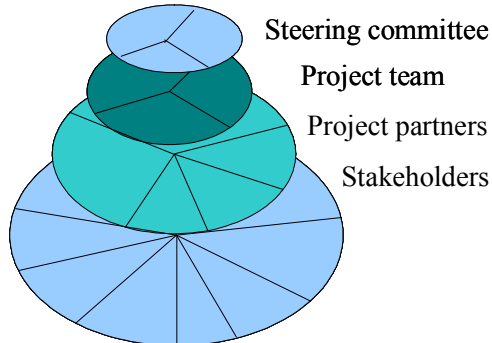
Four factors influence a multi-partner agreement with a support basis:

- Ambition;
- Synergy;
- Trust;
- Commitment.

Part of the risks and difficulties within energy-saving projects can be overcome by good organization requiring a logical phasing of projects (in time and content-related) keeping the process clear and transparent for the parties involved. Besides the fact that the organization must be subservient to the task and intended end-results, it should above all contribute to mutual trust. It is very important that the relationships, tasks, responsibilities and powers of and between people who are involved in such projects are described clearly. A lack of clarity about who can be



addressed with regard to a certain issue and with which mandate this person operates may cause problems at a later stage. This also applies to changing the parties involved during the project.



Scale levels of organization

The *project team* consists of the hard core of the cooperation. The most committed players are part of the project group. Often they are project managers or employees from partner organizations who deal with most of the daily responsibilities and the implementation in general. Stability, openness and trust are essential preconditions. The project group must be clearly authorized, have sufficient resources (people and budget) and preferably remain unchanged right from the idea phase to the completion phase.

The *project partners* are all organizations or parts of organizations involved in the realization of the project. Project partners also often include decision-makers, managers, administrators, etc., who can exert great influence on decisions taken in the process. These decision-makers themselves are less directly involved in developments and implementation. *Stakeholders* are organized or unorganized parties who are not part of the project itself, but have an interest in the project in question.

Within the project organization different roles are definable:

- The *initiator* senses the ambitions of the parties in question and checks whether parties can be brought together. He introduces new parties and arguments. The initiator stimulates thinking in terms of opportunities instead of threats. He creates an atmosphere in which parties can grow towards each other and helps them to build up mutual trust. He offers feedback during the project in his capacity of being the 'conscience' of the project, so the parties involved remain energized. The role of initiator has fulfilled by someone from the organizations directly involved, after all the initiative must come from inside.
- The *counselor* is the fall-back option of the total project organization or parts of it. The counselor offers support through know-how and experience, describes the possibilities and broadens the horizon. The counselor may focus on both content and / or process. It is characteristic that the counselor is not bound by individual interests and can give his input independently and objectively. He advises about options, without being a stakeholder.
- The *facilitator* sees to it that the process goes well, so that the project organization can fully concentrate on the main issues and the content. The facilitator may hereby add specific skills, which are not immediately available at the project partners or which are unknown. Examples of this are specific forms of consultation (brainstorm session, workshops) in order to get the best out of the project partners. The facilitator leaves the content and choices to the project partners.
- The *mediator* can play a role by exploring where tension exists between the project partners or in the process. He can inventory what room partners have to operate and which steps must be taken under which conditions to save the process. The mediator doesn't take sides, is a realist, has a strong empathy and can maneuver strategically. His power is judgment and the art of confrontation.



### 4.3. Management focus of attention

When setting up a collaborative structure between different actors, the initiators and management have to pay attention to the following issues.

- Roadmap : The purpose of your plans, the energy covenant, must be very clear. Therefore, a roadmap is necessary. This document containing ambitions, objectives and targets, project plan etc. All formulated in a SMART<sup>3</sup>. Identify knowledge gaps, create budget and space for external expertise, but be aware that it does not develop itself to a “consultant’s project”. Always keep control over the project.
- Budget : Sufficient financial resources from the covenants partners, but also financial resources from aid programs and grants (national, European);
- Planning : Sufficient staff capacity and a achievable time frame congruent to the targets and ambitions;
- Project team : Skilled staff with power, creativity, involvement and dedicated to the covenant team. Preferable organized in a project team with different taskforces (specialists) and a steering group (management)
- Communication : Pay attention to communication processes, both internal as external. Share knowledge, experiences, and successes. Use public media (television, radio, newspapers, internet) to tell and sell your achievements.
- Process facilitator : If you need external expertise to facilitate the covenant process, hire non-biased and objective consultants without any parallel interests. Make them co-producer of your plans and desired objectives.
- Quality aspects : When do we speak of a successful covenant? Formulate deliverables, measurable performance indicators and concrete milestones

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<sup>3</sup> SMART: Specific, Measurable, Achievable, Relevant, Time framed

## 5 Conclusions

Based on extensive discussions in the EPI SoHo team, workshops with National Feedback Committee's, training sessions, the meeting with Observer Countries and of course the experiences of the pilot projects the next overall conclusions can be drawn.

EPI SoHo and SHO:

1. energy performance became an issue of strategic importance for the SHO;
2. successful energy policy needs an integral approach and a careful process, because it effects every level and every part of the SHO;
3. the logic of the EPI SoHo process approach can be of great help, while
4. the integral model of St Gallen brings the complexity back to comprehensive modules.

EPBD

5. the mandatory Energy Certificate is an important driver for action;
6. national legislation needs to be comprehensive, correct and implemented in time;
7. EPBD can only be a success if the added value for SHO's is fully understood and operational
8. only asset rating EP method is suitable for the SHO

The use of EP assessments

9. whole stock assessments give necessary information on stock quality, insight in possibilities for improvement and financial gain;
10. cost effective tools are necessary; many SHO's in Europe don't have data on their stock; the EP-survey is a major start;
11. EPA's are used for the portfolio management decisions;
12. 'warm rents' (total housing costs) are on the agenda and can be calculated now;

Embedding

13. EPI SoHo led to a growth of knowledge, expertise and skills on the 'energy' subject on various levels in the SHO;
14. the existing gap between the different departments within the SHO decreases through discussing the EP issue throughout the SHO;
15. in the field of execution of refurbishments there is still a lack of qualified craftsmen, architects etc.
16. the EPI SoHo approach can be viewed as a *change approach*, applicable also to other challenging fields besides 'energy'.

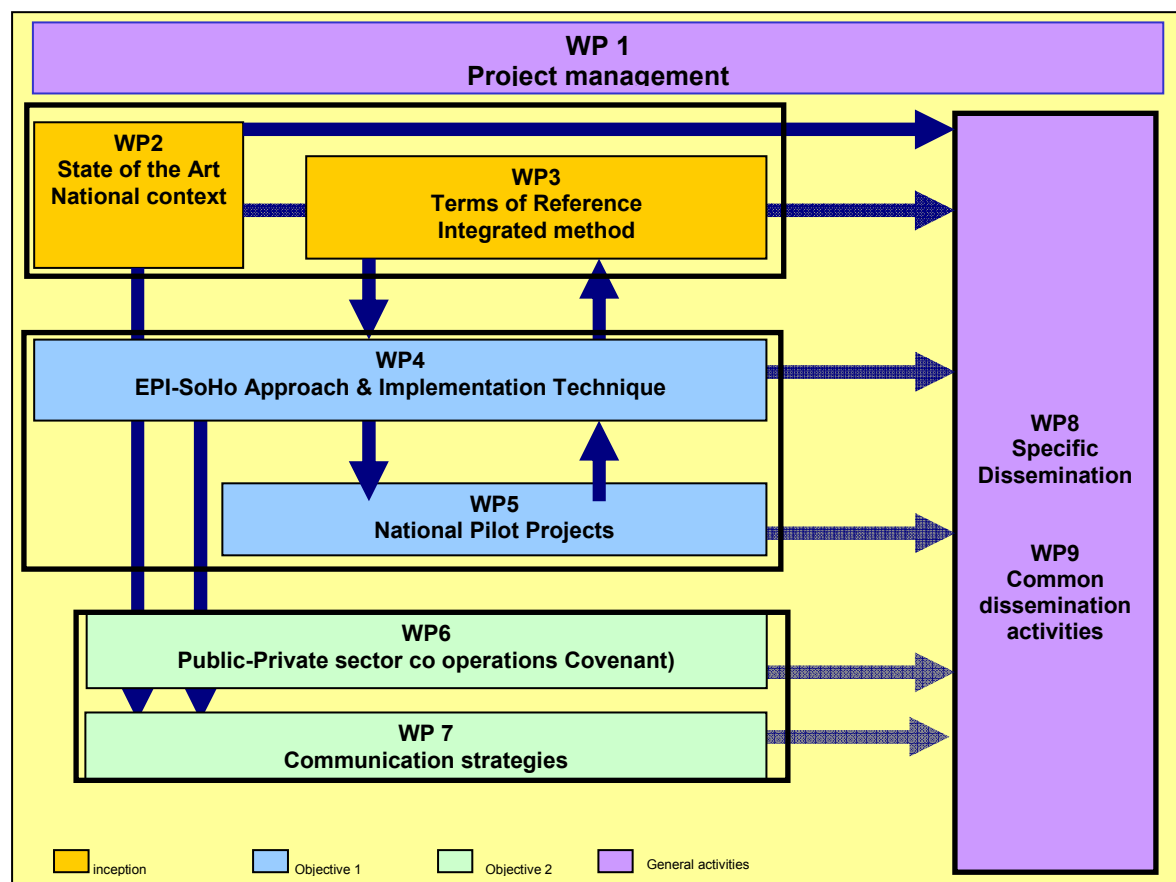
Realisation of RUE and RES

17. the legal restrictions to rent increases and other rental legislation restrictions are often a barrier for huge improvements of the energy performance in the housing stock.
18. good and underpinned communication with tenants about the profitability of refurbishment is essential for approval of the plans;
19. local collaboration with local authorities and other market parties can be of great help.

## 6 Annexes

### Annex 1: Overview of EPI SoHo reports

The EPI SoHo project was divided into several work packages, leading to subsequent reports. Every report thus has its logical part in the overall result.



*Figure :Overview of all work packages and their relation*

Reports:

- D2.1 Status of national contexts
- D2.2 Recommendations for ToR WP3
- D3.1 EPI-SoHo Terms of Reference
- Terms of Reference, Summary of Backgrounds
- Description and backgrounds on the Terms of reference
- D4.1 EPI-SoHo Approach and Implementation Technique - Assessment
- D4.2 EPI-SoHo Approach and Implementation Technique – Embedding
  - Sub-packages:
  - 4.a.; Booklet “Approach and Implementation technique”
  - 4.b.; Booklet “Checklist for portfolio Integration”
  - 4.c.; Booklet “Inspection Protocol”
  - 4.e.; Booklet “Recommendations for End-users and Policy makers”

- D5.1 National Pilot Projects.
  - Dutch National Pilot Report (Dec. 2008)
  - Italian National Pilot Report (May 2008)
  - German National Pilot Report (Dec. 2008)
  - French National Pilot Report for SICF (March 2008)
  - French National Pilot Report for Logirep (March 2008)
- D5.2 National Pilot Projects: Overall Evaluation Report
- D6.1 Methodology for successful co-operation between the public- and private sector
- D6.2 A New Energy Covenant
- D6.3 Dissemination activities
- D7.1 Communication Strategy
- D7.2 Energy Savings Awareness Campaign
- D8.1 Project Website
- D8.2 Work of the National Feedback Committees
- Brochures: 1 general in English
- Brochures: thematic brochures in National language
  - Netherlands
  - France
  - Italy
  - Denmark
  - Germany
- Newsletters X 5
- EPI-SoHo factsheet

## Annex 2: List of contacts

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For more information:

Visit our website [www.epi-soho.eu](http://www.epi-soho.eu)



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