



Energy Efficiency Finance Market Place

18th-19th January 2017

EFIDISTRICT.Fwd

Regional Strategy for Efficient Districts
in Navarre (Spain). MLEI-PDA



Co-funded by the Intelligent Energy Europe
Programme of the European Union

 **efidistrict**

Nasuvinsa 
Navarra de Suelo y Vivienda, S.A.



1

Starting points

1. Nasuvinsa and overview of Navarre
2. Forest biomass potential in Navarre
3. Residential housing context in Spain
4. Spanish heating infrastructures context
5. Lourdes Renove Project

3

Achievements

1. Technical preliminary projects.
2. Collaboration agreement. Replica MLEI
3. Framework finance agreement with Caja Rural.
4. Dissemination of the project.
5. Investment mobilisation.

2

Efidistrict FWD

1. Objectives, overview of the district and milestones
2. Creation of the new district heating network. Biomass
3. Renewal of the distribution networks of the existing DH systems
4. Energy refurbishment of the residential buildings

4

Difficulties

1. New regional Government and new municipalities
2. Current economic and political situation in Spain
3. Current situation Brent barrel prizes
4. Urban planning

1

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1. Starting points

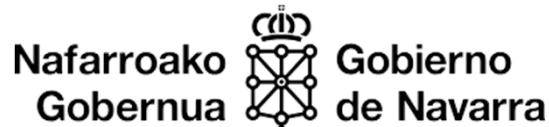
Nasuvinsa and overview of Navarre

efidistrict



1. Starting points

Nasuvinsa and overview of Navarre



Population in Navarre: 640.154 inh
Regional Area: 10.421 km²

The Capital City: Pamplona
Population Area: 348.753 inh.
Surface: 354,2 km²

Population in the district: 20.000 inh.



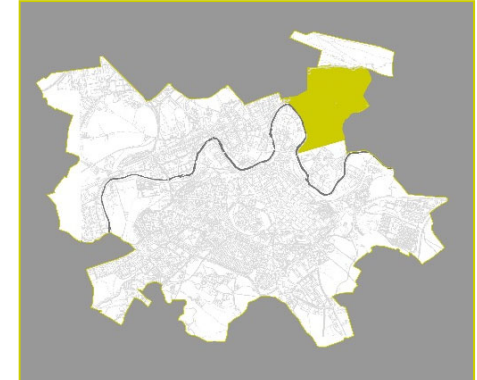
Spain



Navarra



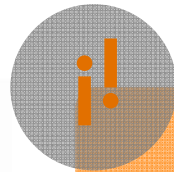
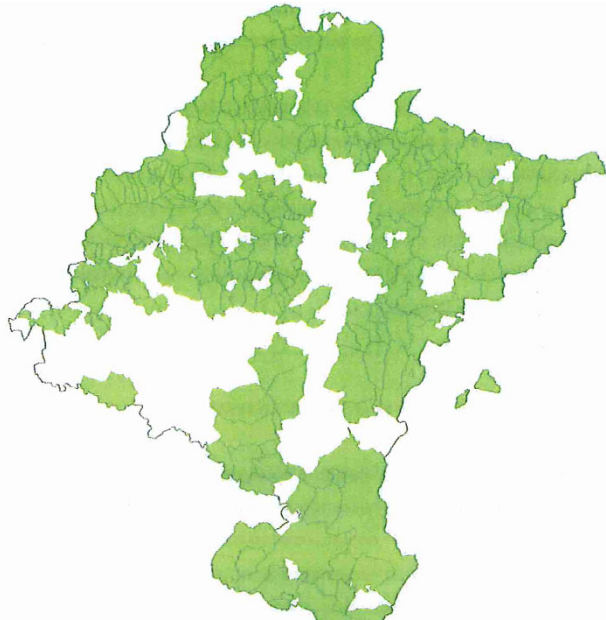
Pamplona



District of Chantrea

1. Starting points

Forest biomass potential in Navarre



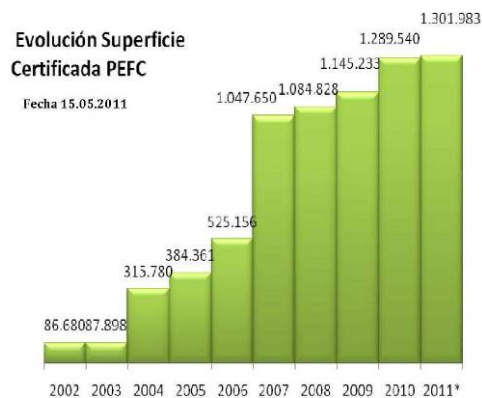
Forest biomass potential in Navarre

65% of Navarre land is forest land
Forest surface: **450.000 Ha.**

70% is public property

The IFN4 for Navarre estimates a total stock of
60'2 M m³.

Stable biomass price



“Forest biomass program”

• **2020:** Increase the use of **forest biomass** by 83% compared to **2010**.

Key points

Spanish heating infrastructures context

General heating systems: **Individual**
District Heating: **70s and 80s**

Difficulties to the foregoing heating systems:

Lack of knowledge

Significant problems: functioning

Difficulties to compliance
7/2012/UE

Complexity of the management

One of the **main objectives of Efidistrict** project is to promote investments for **enhancement and improvement** of the functioning and performance of said installations, such that :

- Old district heating systems are not decentralised
- Show society as a whole that this kind of Heating system is more effective than an individual one.

Key points

Residential housing context in Spain

108.623 dwellings in Spain

(as of 2011)

were built between **1950 and 1980**

ENBE-CT-79: **lack of INSULATION:**

- **76,8%** (1950-1980) are **collective housing**

Spain is the country within the previous **EU-15** with the highest percentage of home owners.

83% home owners

17% leased properties

• **10 millions** are collective housing **without insulation.**



Thermal envelope with an **agreement** of at least 60 % of the co-owners.

• **38,03%** has a **mortgage**: difficulty to carry out property investments and obtain finance.

Starting points

Lourdes Renove project

LOURDES reNOVE



GLOBAL PROJECT

Goal: Integral energy renovation project, of neighborhood of Lourdes

September 2009 - October 2011

development and improvements to the public infrastructures.

Integral renewal of district heating (486 buildings and 31 entrance portals).

Energy rehabilitation of 10 buildings:

- o Thermal claddings

- **EnerAgen 2012** Prize.

- **Endesa** Prize 2012. Barcelona.

- **Sustainable City** Award 2012. Madrid.

- **City, urban development and ecology** Prize. XII edition. Awarded by AVNAU of the **COAVN**.

- **Finalist I Energy Efficient A3e**.

- **Sustainable Building Prize Castilla and León**. V edition. Valladolid. 2015.

MAIN LESSONS LEARNT:

- **Promotion** of global project for **INTEGRAL ENERGETIC REGENERATION**.

- **MANAGEMENT GROUPS**

- 1. Objectives, overview of the district and milestones**
- 2. Creation of the new district heating network. Biomass**
- 3. Renewal of the distribution networks of the existing DH systems**
- 4. Energy refurbishment of the residential buildings**

istrict FWD

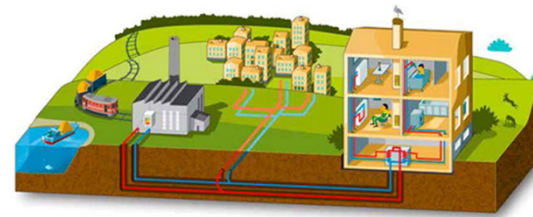
efi district



istrict FWD

Objectives, overview of the district and milestones.

idistrict



OBJECTIVES

Renewable energy support:

al resources.
e stability.



ew district heating network.
ass.

2. Energy savings measures:

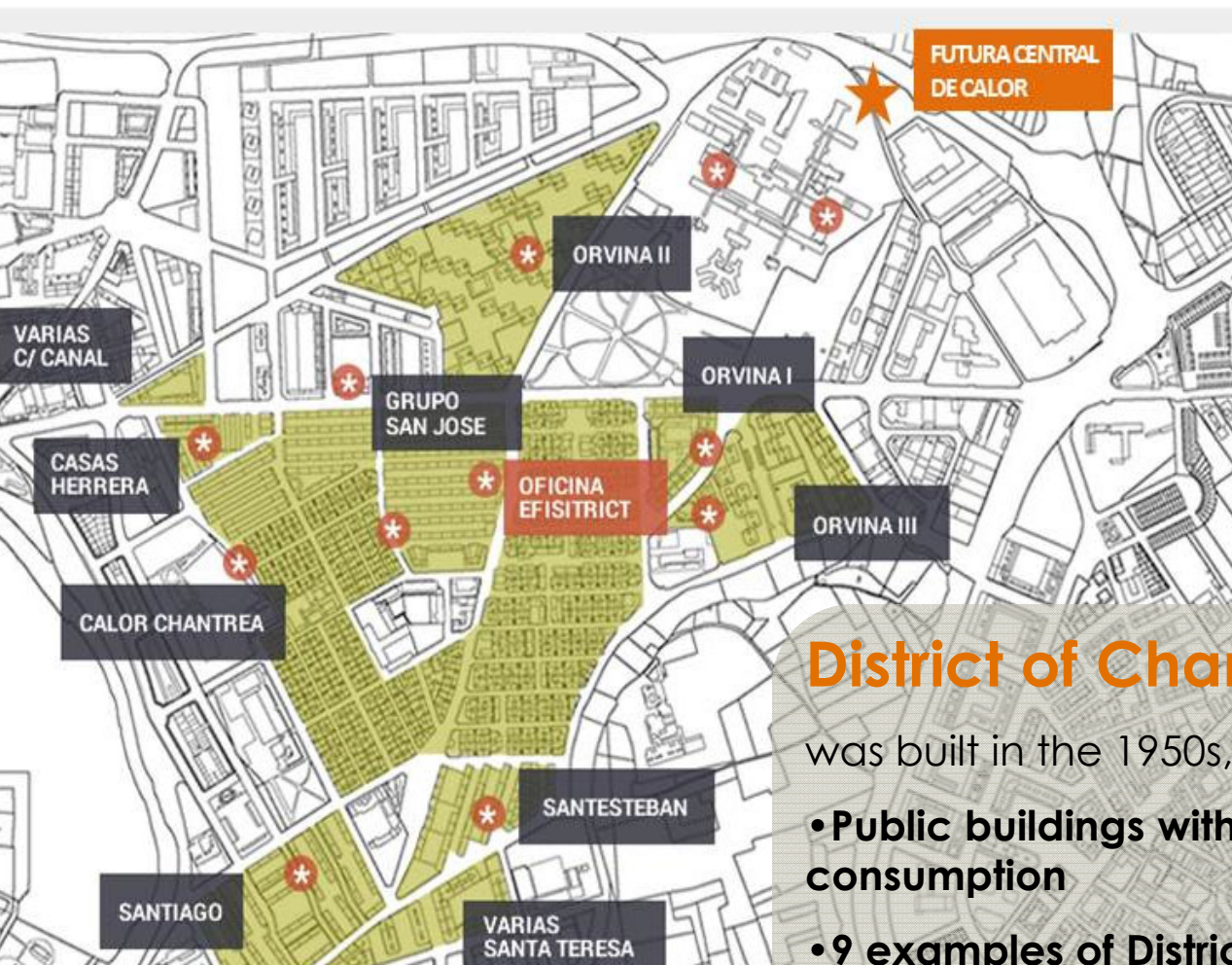
- Installations
- Buildings (Thermal envelope)



**B. Renewal of existing
District Heatings systems.**

District FWD

Objectives, overview of the district and milestones.



District of Chantrea

was built in the 1950s, 1960s and 1970s:

- **Public buildings with significant energetic consumption**
- **9 examples of District Heating.**

istrict FWD

Objectives, overview of the district and milestones.

th March de 2014 opening of the Efidistrict District office.



Efidistrict District office

Calle Huarte, nº 32, bajo, Pamplona

Phone: +34 948 14 85 75

E-mail: efidistrict@nasuvinsa.es

Web: www.efidistrict.eu



Open to the public:

Mornings: 9:00 to 14:00.

Evenings: By appointment.



District FWD

Objectives, overview of the district and milestones.

Main information regarding the activities carried out in the Chantrea District are:

Over **500 queries** resolved through the office of the Chantrea District.

Over **70 meetings** held with residents and neighbours.

Direct contact of the **EFIDISTRICT project** with over **900 residents and neighbours**.

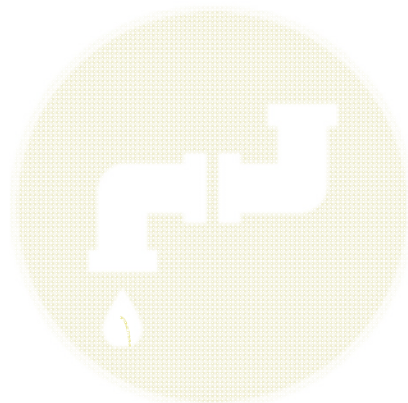
20 entrance portals, 500 dwellings, with the favourable approval of the competent authorities, and the

istrict FWD

Creation of the new district heating network. Biomass.



efi district



District FWD

Creation of the new district heating network. Biomass.



Field work:

- Technical characteristics of the installations.
- Compilation of energy consumptions and bills.

March 2015 Delivery of the feasibility study (AIN).

January 2016 Benchmarking.

June 2016 Updated feasibility study.

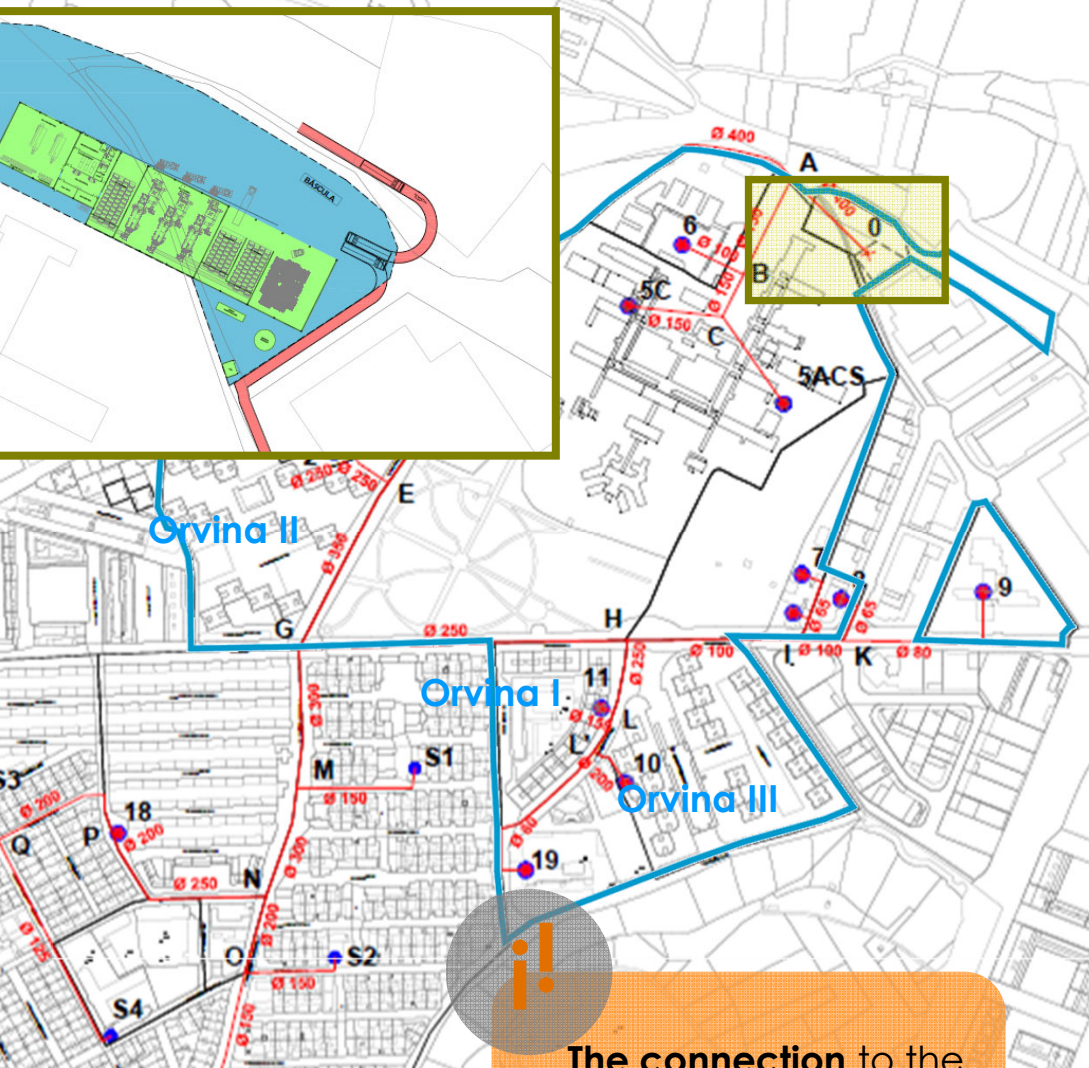
December 2016 Collaboration agreement between Pamplona City

Council and Burlada City Council.

December 2016 Business Plan

District FWD

Creation of the new district heating network. Biomass.



Main services provided:

- **Heating and Hot Sanitary Water.**
- Alternative supply of renewable energy. Biomass

NEW CENTRAL heat production

Area: **9.000 m²**

Built space: **3.230 m²**

Dwellings: **4.000**

Public buildings: **8**

Biomass: 9 MW

Natural gas: 20 MW

Storage tank: **1.800 m³**

Phase 1.

2.200 dwellings + 8 Public buildings.

(4.5 MW biomass + 10 MW natural gas + 1.800m³ storage tank)

Budget: **9 M €**

Investment: **Public ESCO**

The connection to the

District FWD

Renewal of the distribution networks of the existing DH.



efi district





Field work:

- Technical characteristics of installations.

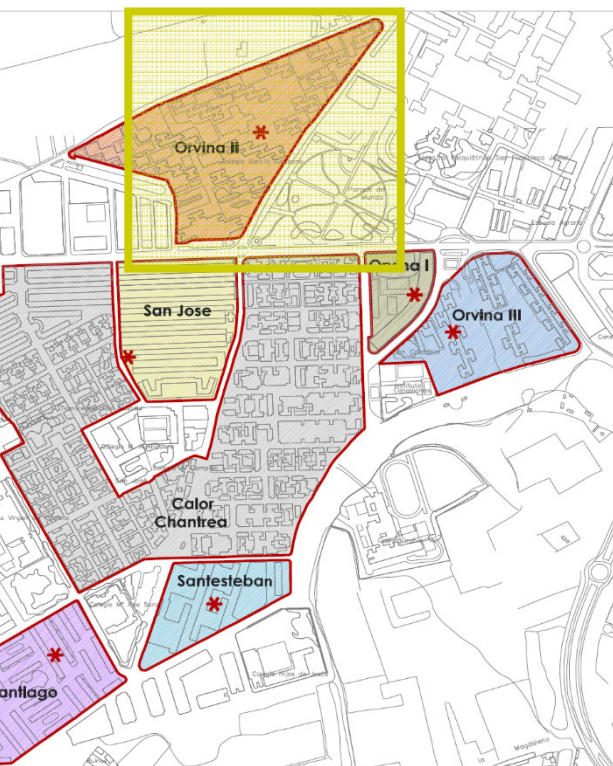
December 2016 3 cooperatives have retrofit their networks:

- **Improve the internal functioning**, by means of balanced energy consumption, regulation,...
- Include preliminary actions in order to enable the installation of the required **regulation and control** (meter) measures per dwelling, pursuant to **Directive 2012/27/EU** which shall come into full force and effect as from 1 January 2017 .

- Substations
- Entrance portal meters. A measure which promotes the

District FWD

Renewal of the distribution networks of the existing DH.

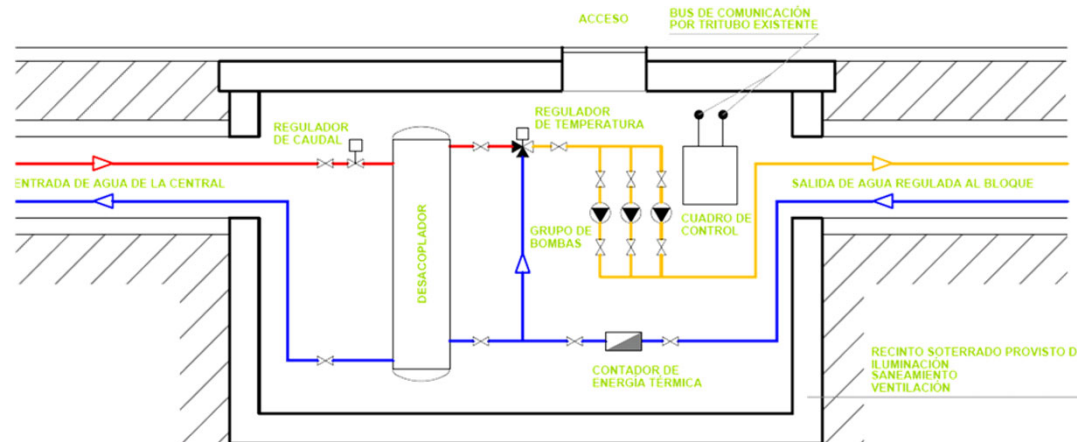


Orvina II
38 towers
1200 dwellings

Proposal:
14 substations

Investment:
682.300 €

Calor Chantrea
San José
Orvina I
Orvina II
Orvina III



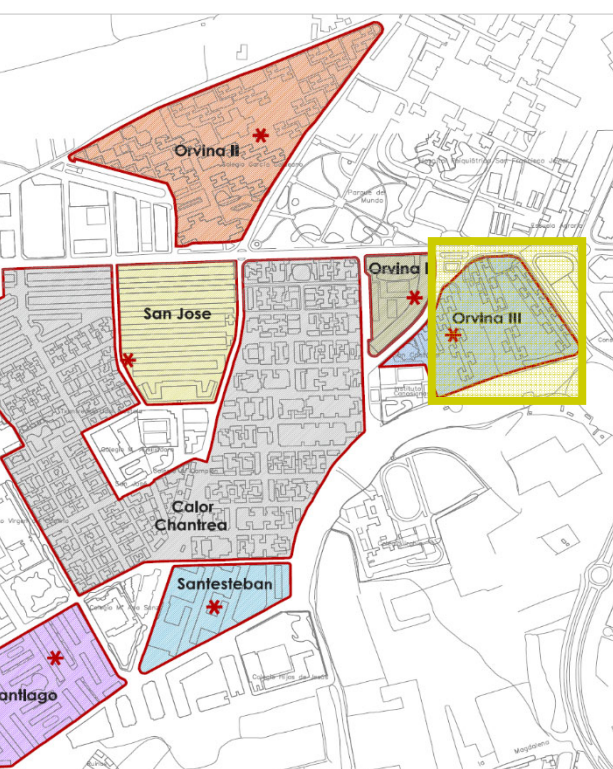
District FWD

Renewal of the distribution networks of the existing DH.



District FWD

Renewal of the distribution networks of the existing DH.



Orvina III
23 towers
704 dwellings

Proposal:
Regulation and control systems

Investment:
104.200 €

Calor Chantrea
San José
Orvina I
Orvina II
Orvina III

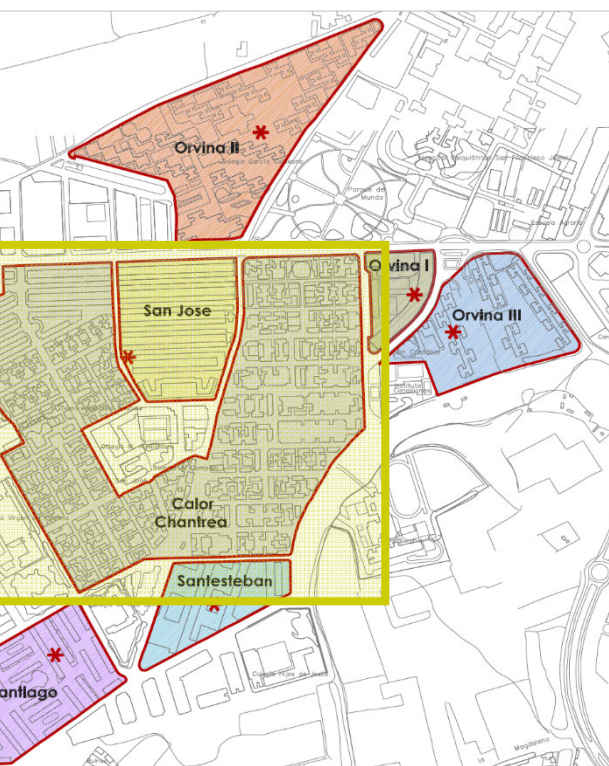
District FWD

Renewal of the distribution networks of the existing DH.



District FWD

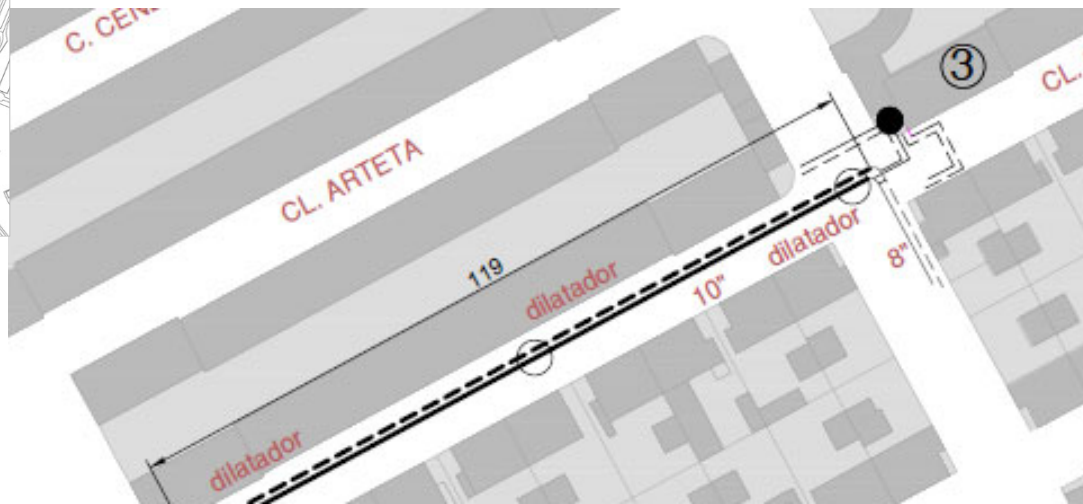
Renewal of the distribution networks of the existing DH.



Calor Chantrea
940 dwellings

Proposal:
**Regulation and
control systems**

Investment:
242.700 €



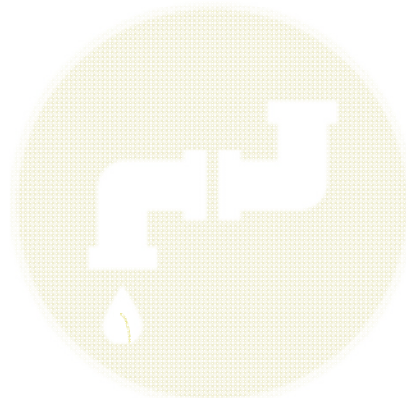
Calor Chantrea
San José
Orvina I
Orvina II
Orvina III

District FWD

Energy refurbishment of the residential buildings.



efi district



District FWD

Energy refurbishment of the residential buildings.



2014 Nasuvinsa formalises a series of public architectural tenders.

September 2014 private finance of the Caja Rural de Navarra.

September 2014 Exhibition was conducted which set out the winner

preliminary projects →

ACTIVE PROCESS STARTED

istrict FWD

Energy refurbishment of the residential buildings.



Winner preliminary projects Orvina II and III



PRIZE
Germán Velázquez Arteaga

VA
RQUITECTOS



2

PRIZE
COOPERATIVA arquitectura SCP

cooperativa
ARQUITECTURA



PRIZE
DG Arquitectura Habitable SCP

DG
A



A

Accesit
BOA Arquitectos SLP

BOA
ecoarquitectos



Dynamization and participation plan (DPP)

Over 200 briefings with the communities:

- Advantages of the thermal envelope
- Technical solutions → energy savings
- Estimated costs
- Financial possibilities: grants and loans

Result of the DPP:
20 communities
500 dwellings

District FWD

Energy refurbishment of the residential buildings.



2014 Nasuvinsa formalises a series of public architectural tenders.

September 2014 private finance of the Caja Rural de Navarra.

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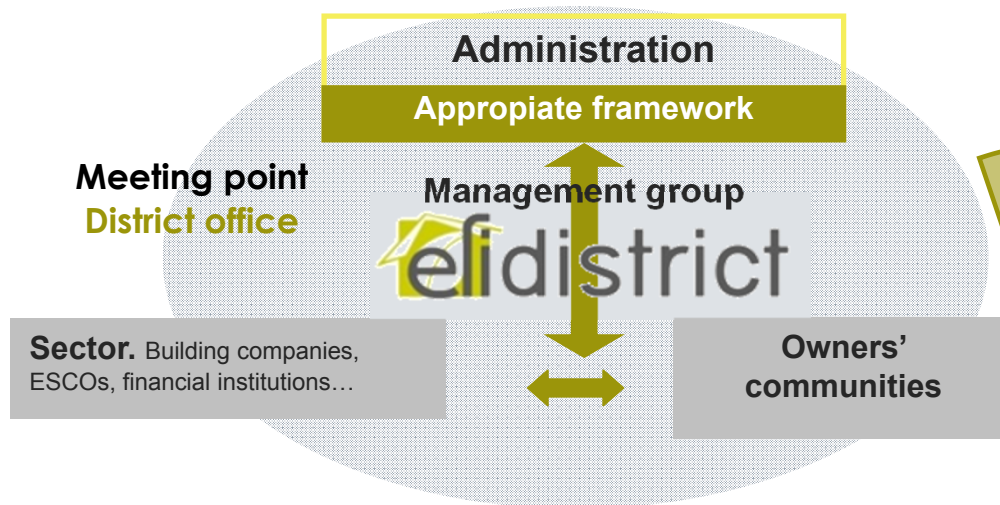
primary projects →

ACTIVE PROCESS STARTED

September 2015 Collaboration agreements with owners' communities

September 2015

JOINT TENDER PROCEDURE



Performance process

1. Technical tender for preliminary projects for refurbishment buildings
2. Selection of the preliminary projects
3. Drafting projects for joint bidding (lot of works)

Joint tender procedure (economy of scale)

District FWD

Energy refurbishment of the residential buildings.



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primary projects →

ACTIVE PROCESS STARTED

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September 2015

JOINT TENDER PROCEDURE

January 2016 Apply IDAE' records

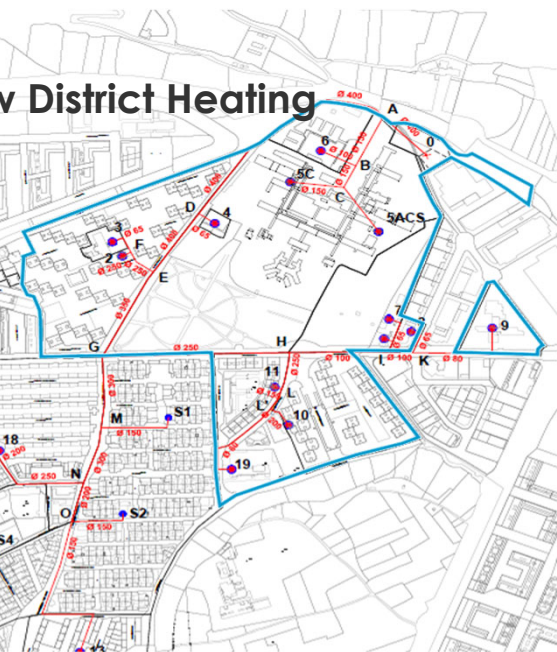
February 2016 Contracts between builders and owners

September 2016 Building permit

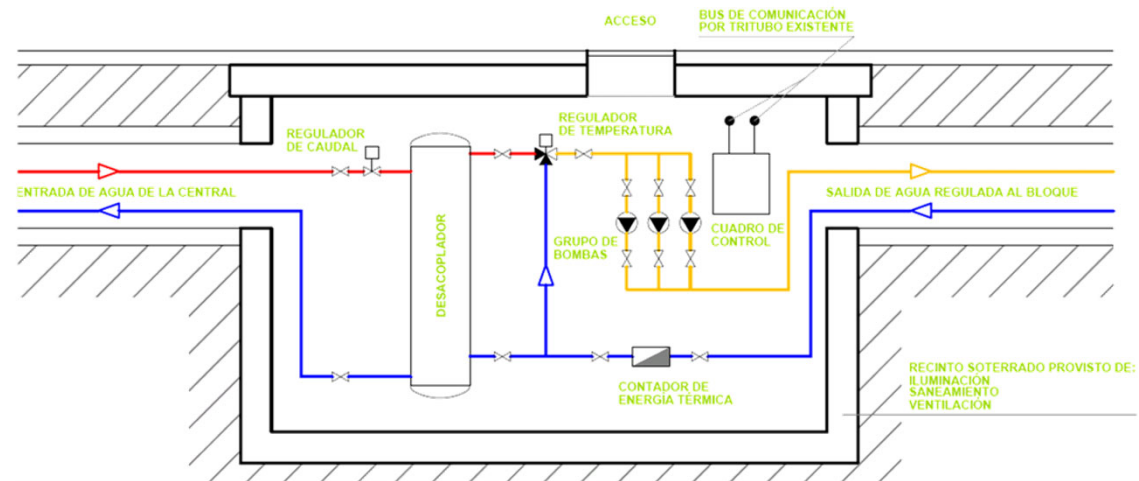
- 1. Technical preliminary projects.**
- 2. Collaboration agreement. Replica MLEI**
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Achievements

Technical preliminary projects.



2. Renewal of old District Heating Systems



Formal envelopes



achievements Collaboration agreement. Replica MLEI.



Diario de Noticias - Viernes, 17 de abril de 2015



El consejero Luis Zarraluqui, el alcalde Enrique Maya, y de Nasuvisna, el gerente Sergio Lizarza y Ana Uretaña.

DATOS

- **395 viviendas.** El proyecto Efidistrict Chantrea fue presentado en marzo de 2014 con la apertura de su oficina de atención al público. Atendida por personal técnico de Nasuvisna, ha recibido hasta la fecha 174 visitas. Además, se han organizado reuniones con vecinos del barrio a las que han asistido 395 unidades familiares. De esas visitas, se han cerrado 8 acuerdos con portales, que aglutinan un total de 160 viviendas, para acometer reformas.
- **Financiación Caja Rural.** En diciembre de 2014 se llegó a un acuerdo con Caja Rural para acceder a financiación para que las comunidades de propietarios pudieran acometer las obras de manera vertijosa, sin necesidad de avales personales y por el valor total de la inversión, hasta 12 años y sin comisiones de cancelación o amortización. Efidistrict está gestionado por un consorcio formado por dos miembros: el Departamento de Economía, Hacienda y Empleo y Nasuvisna.

EL PLAN ENERGÉTICO DE LA CHANTREA SE EXPORTARÁ TAMBIÉN A LA MILAGROSA

Las ayudas para rehabilitación se equiparan a las del Casco Viejo
160 pisos en Orvina ya han dado luz verde a la calefacción de biomasa

Ana Ibarra
Javier Bergasa

ELIDISTRICT

1. Apoyo en Energías Renovables:

- Recursos Locales.
- Estabilidad de precio.

2. Alzans Energéticos:

- Inedificables.
- Edificaciones (Envoltentes térmicos).

A. Nueva Calefacción de Barrio. Biomasa.

PAMPLONA - El Gobierno de Navarra y el Ayuntamiento de Pamplona han firmado un convenio de colaboración para hacer extensivo el nuevo modelo de rehabilitación energética que se lleva a cabo en la Chantrea (Efidistrict: Chantrea) a otras zonas de la ciudad que también requieren renovar y hacer más eficientes sus sistemas de calefacción y agua caliente. Un plan estratégico que trata de implicar en sus infraestructuras a barrios enteros. El Gobierno se plantea informar a los vecinos de la Milagrosa de la ventaja de abordar proyectos de reforma integral a escala de barrio, incluyendo viviendas y dotaciones. Para ello el convenio prevé que los barrios que se incluyan en este proyecto tengan ayudas análogas a las que se aplican en las Áreas de Rehabilitación Preferente (por ejemplo el Casco Viejo de Pamplona).

La rehabilitación energética integral de las edificaciones, incluidas sus envolventes térmicas (fachadas) son las tres fases del proyecto. Tanto en Chantrea como Milagrosa, barrios a los que el Ayuntamiento quiere dar una "oportunidad" de regeneración, según Maya, varios bloques de viviendas dependen de una caldera común. Las calderas

edificios públicos). Se crearían además subestaciones enterradas.

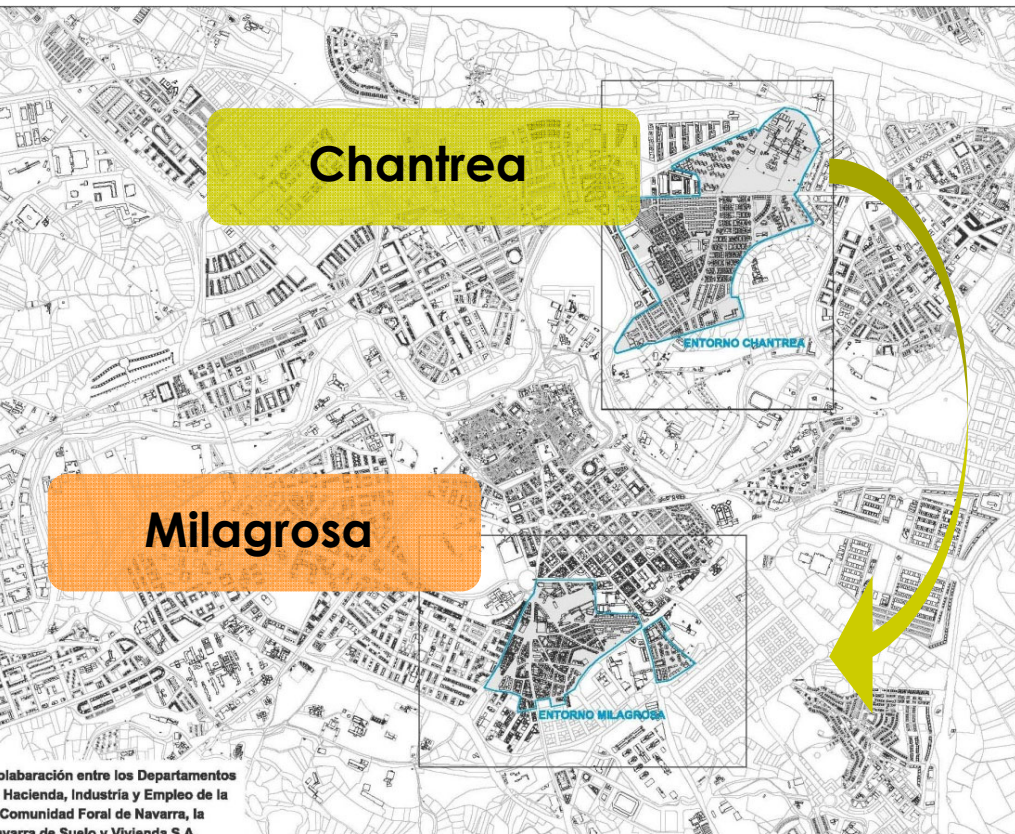
Las Áreas de Rehabilitación Preferente contemplan ayudas forales del 40% para ingresos hasta 2,5 veces el IPREM y del 24% para ingresos de entre 2,5 y 3,5 veces el IPREM. Asimismo, se mejoran los porcentajes de ayudas y desgraciará los costes de los vecinos por obras comunitarias como envolventes térmicas y de accesibilidad, y que se encuentran en situación económica grave. Por su parte, el Ayuntamiento de Pamplona tramitará los instrumentos urbanísticos necesarios para facilitar la implantación de las calefacciones de barrio y desgraciará los costes de los vecinos por obras comunitarias como envolventes térmicas y de accesibilidad, y que se encuentran en situación económica grave. Por su parte, el Ayuntamiento de Pamplona tramitará los instrumentos urbanísticos necesarios para facilitar la implantación de las calefacciones de barrio y desgraciará los costes de los vecinos por obras comunitarias como envolventes térmicas y de accesibilidad, y que se encuentran en situación económica grave.

A news article from a local newspaper:
"The energetic plan which is taking place in Chantrea, it will be implemented in Milagrosa district"

Diario de Noticias, 17th April 2015

Achievements

Collaboration agreement. Replica MLEI.



Agents implied:

- Government of Navarre
- Local Council of Pamplona
- Nasuvinsa

Objectives:

- Facilitate the success of Efidistrict project
- Parties agree under Efidistrict project shall be exported to another district of the city, namely the

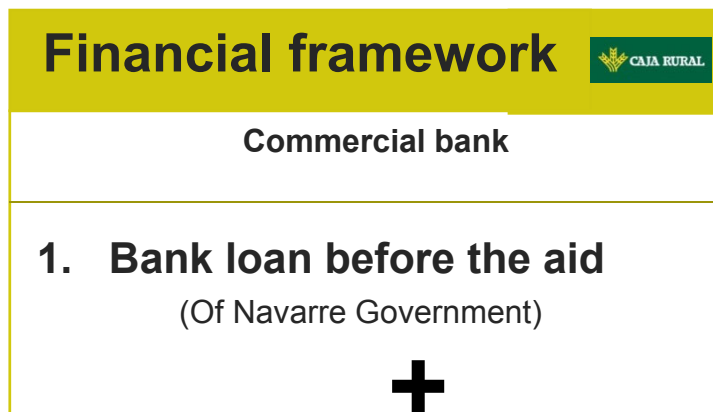
Achievements

Financial framework agreement with Caja Rural.

November 2014 a **framework finance** agreement was formalised with Caja Rural de Navarra for the Efidistrict project.

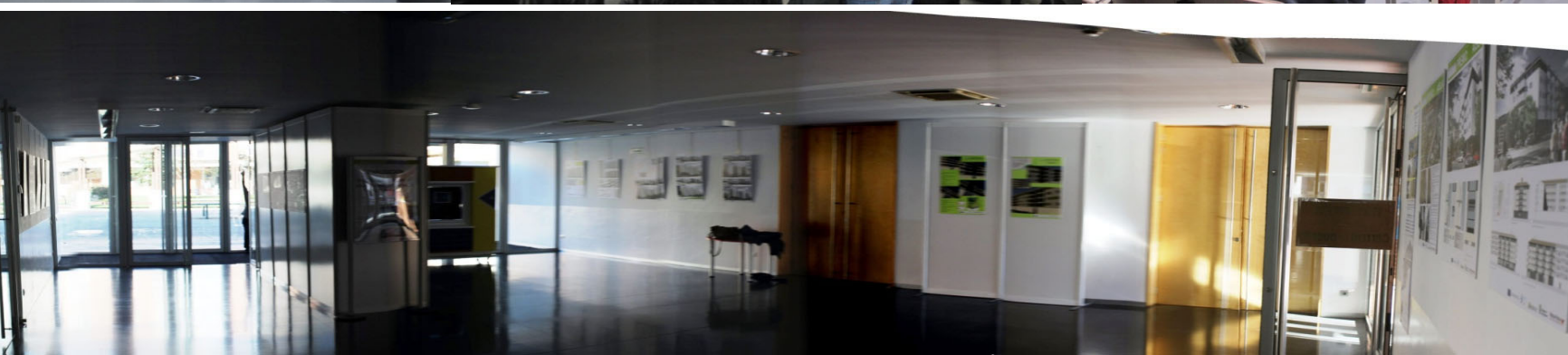
Important aspects of the finance facility:

- Credits provided to Residents' Associations.
- Covers the total amount of the investment; both the subsidized part and non-subsidized part.
- Term of up to a maximum of 12 years



Achievements

Dissemination of the project.

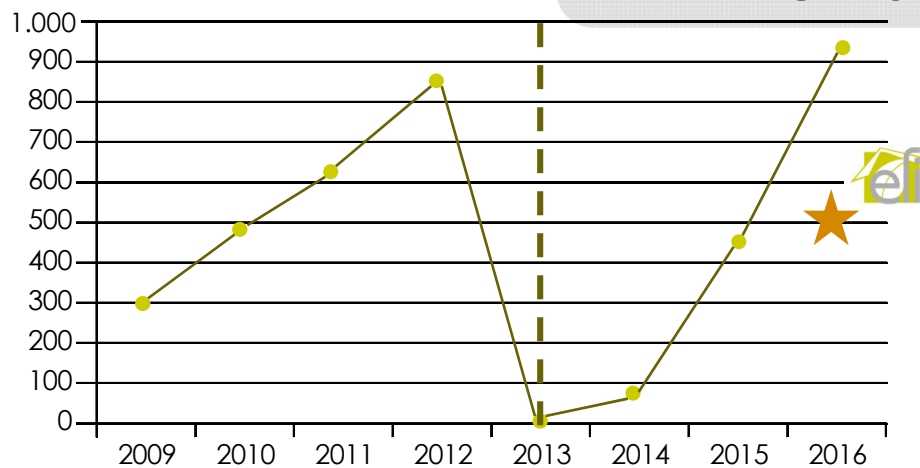


Achievements

Investment mobilization.

Financial envelopes mobilized in Navarre

Category	Dwellings
...	303
...	476
...	628
...	850
...	0
...	78
...	448
...	974



In **2013** it is established in Navarre that thermal rehabilitations compliance the requirements of **CTE for new "work"**.

In **2016** almost **500** dwellings of the total amount envelopes in Navarre are developing thanks to **Efidistrict** project

Category of investments	Amount already signed	Amount still expected to be signed
New Thermal Grid (NDH)	35.000 €	4.000.000 €
Existing District Heating Renovation (Re DH)	1.000.000 €	1.000.000 €
...	5.000.000 €	7.000.000 €



difficulties

- 1. New regional Government and new municipalities**
- 2. Current economic and political situation in Spain**
- 3. Current situation Brent barrel prizes**
- 4. Urban planning**

culties

new regional Government and new municipalities (2015).



culities

new regional Government and new municipalities (2015).

Current economic and political situation of Spain.

Budgetary Stability Law. Ley orgánica 27/2012



Public ESCO could not incur public debt.

However a public ESCO means security to neighbours

culities

new regional Government and new municipalities (2015).

Current economic and political situation of Spain.

Budgetary Stability Law. Ley orgánica 27/2012

Current situation Brent barrel prizes.

Updated study consumption (2016).



Updated feasibility study (current client demands)

Business plan (NDH resized, biomass-gas, mild winters)

culities

new regional Government and new municipalities (2015).

Current economic and political situation of Spain.

Budgetary Stability Law. Ley orgánica 27/2012

Current situation Brent barrel prizes.

Updated study consumption (2016).

Urban planning.



- 1. Change of cycle**
- 2. Coordination**
- 3. Global project management**
- 4. Efidistrict management group**

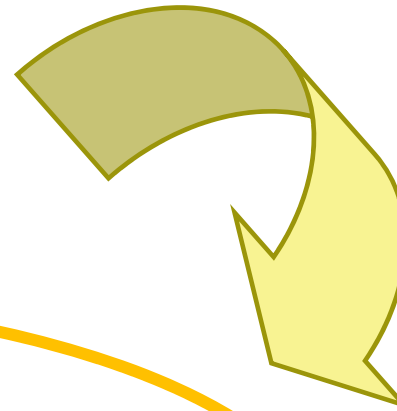
Change of cycle

Change of the model

Structural solutions



Integral energy renovation project



COORDINATION

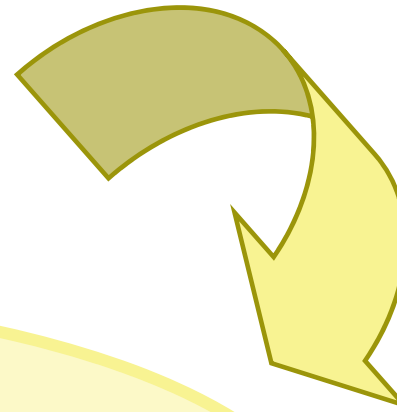
Change of cycle

Change of the model

Structural solutions



Integral energy renovation project



GLOBAL PROJECT MANAGEMENT

Conclusions



Administration
Appropriate framework

Meeting point
District office

Management group
efidistrict

Sector. Building companies, ESCOs, financial institutions...

Owners' communities



GLOBAL PROJECT MANAGMENT



 efi district

THANK YOU