INITIAL SOCIO-ECONOMIC RESULTS FROM THE SERVE PROJECT

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SERVE Socio-economic analysis: Objectives

- To assess socio-economic impacts of the SERVE project on the region and its citizens:
  - Impact on job creation and service supply
  - Economic analysis of retrofitting
    - Analysis of payback time for project measures in building sector
  - Analysis of local funding and money flows
  - Opportunities for development of ESCO's
    - Potential for replication
  - Involvement, attitudes of building owners and consumers
    - Surveys of attitudes, opinion and knowledge
    - Case studies

Socio-economics – what is it?

- People, people, people!
- People and economy
- People and environment
- People and society (other people)
- Local communities in focus
- Regional (very specific) issues

SERVE WP6: Organisation of work

- REGEA and TI (LIT)
- First 18 months: preparation of methodology, tools and needed data
  - For each objective a separate tool/methodology is envisaged to be utilised – toolbox approach
  - Tools and methodology has been defined (D6.3.) and presented at SE workshop in December 2008
- Months 19-60: data gathering/reviewing and performing analysis
  - Modification of methodology if needed (based on available data)
  - Presentation of draft results, consultations and feedback, final results

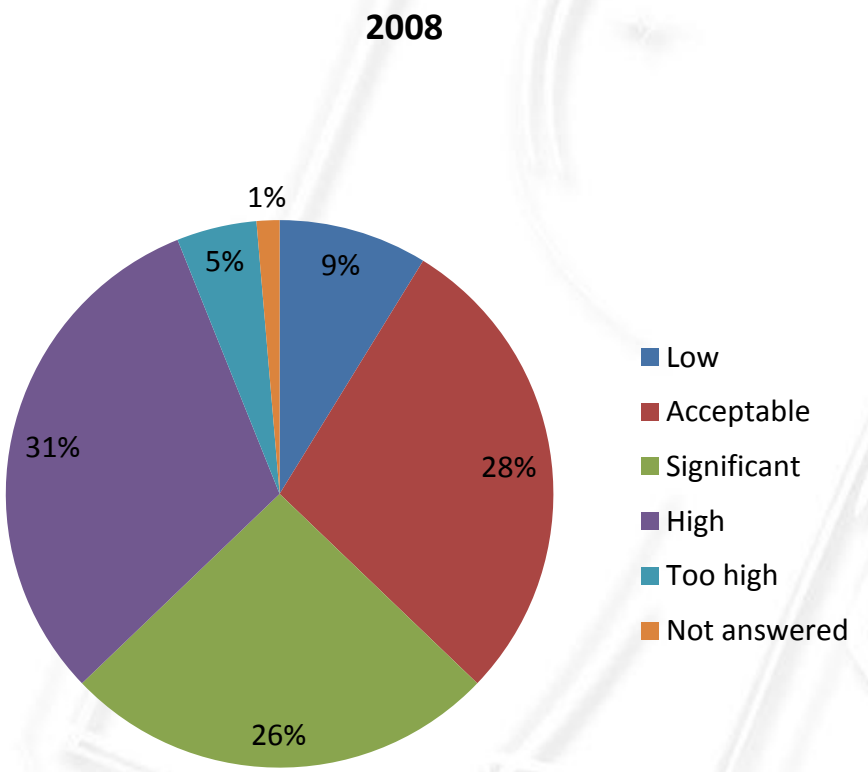
Overview of deliverables

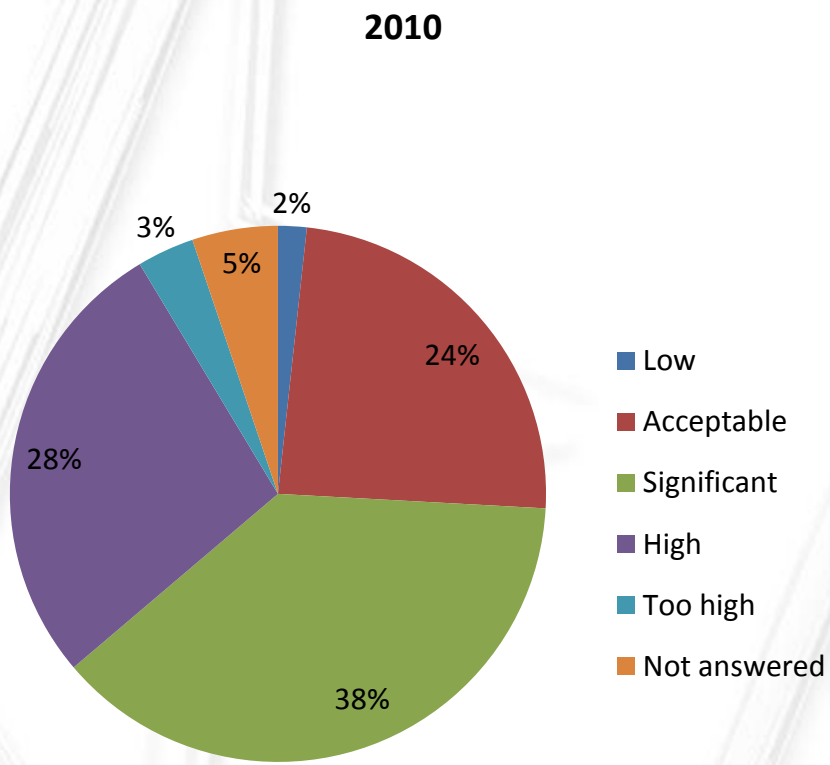
No	Title	Status
D 6.1	Stakeholder Chart	C
D 6.2	Report on the Baseline Socio-Economic Analysis within the SERVE region	C
D 6.3	Report on the Methodological Toolbox	C
D 6.4	Socio Economic Stakeholder Workshop minutes	C
D 6.5	Data sheets for SERVE developed to allow for future benchmarking and comparison of impact.	C
D 6.6	Review of ESCO Options in Ireland	C
D 6.7	Report and analysis of the second baseline analysis of the SERVE region	C
D 6.8	Study on the project impact on job creation and service supply	IP/D
D 6.9	Report on the local funding and money flows from project actions	IP/D
D6.10	Analysis of economic and financial parameters for SERVE project measures in buildings sector and identification of opportunities for the development of ESCOs	IP/D
D6.11.	Case studies on SERVE measures in households/buildings	C
D6.12.	Report and analysis of the final baseline analysis of the SERVE region	NYS

SERVE Baseline Socio-Economic Analysis (June 2008, May 2010)

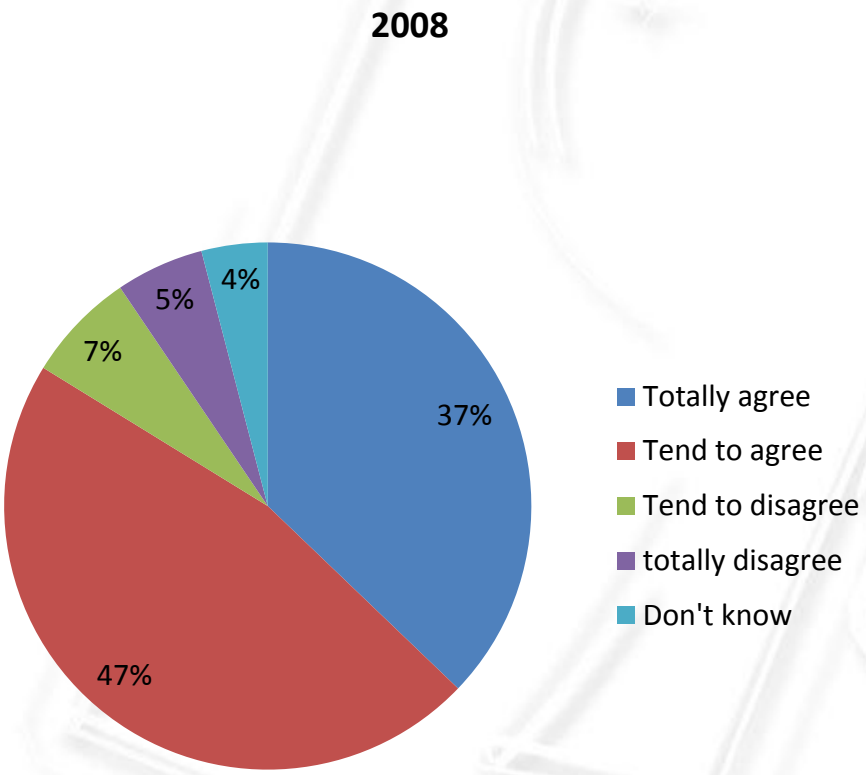
- Methodology and sample
  - Questionnaire, 20 questions in 4 groups
    - Status of RES and RUE in region
    - Attitudes, opinion, knowledge on sustainable development
    - Willingness to participate in activities/events
  - Face-to-face (June 2008), postal return (May 2010)
  - Proportional distribution of sample
    - Borrisokane
    - Cloughjordan
    - Toomevara
  - 'Nth address selection' procedure: random sample

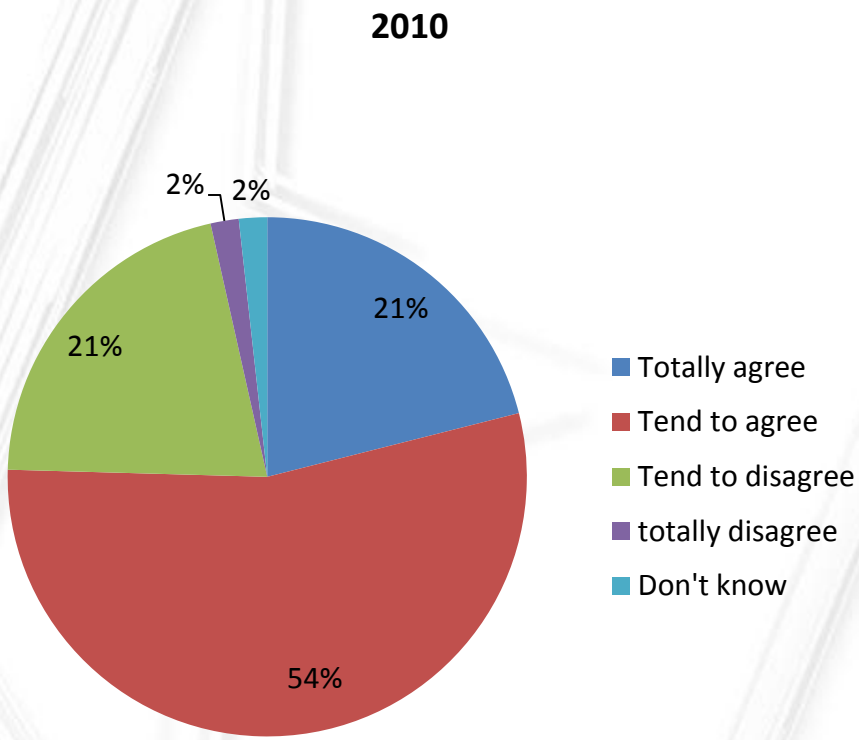
How would you rate your energy costs?



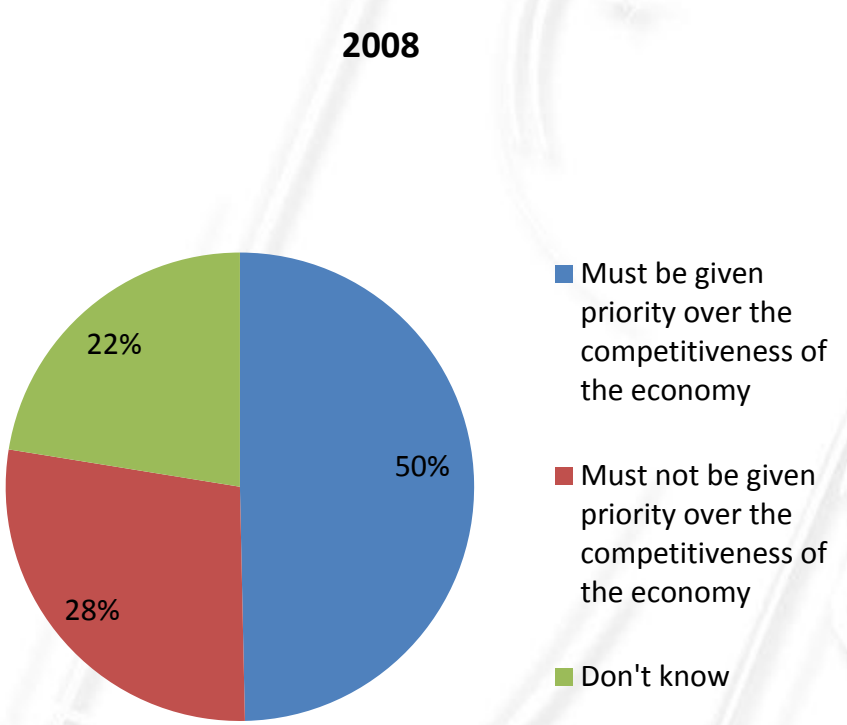


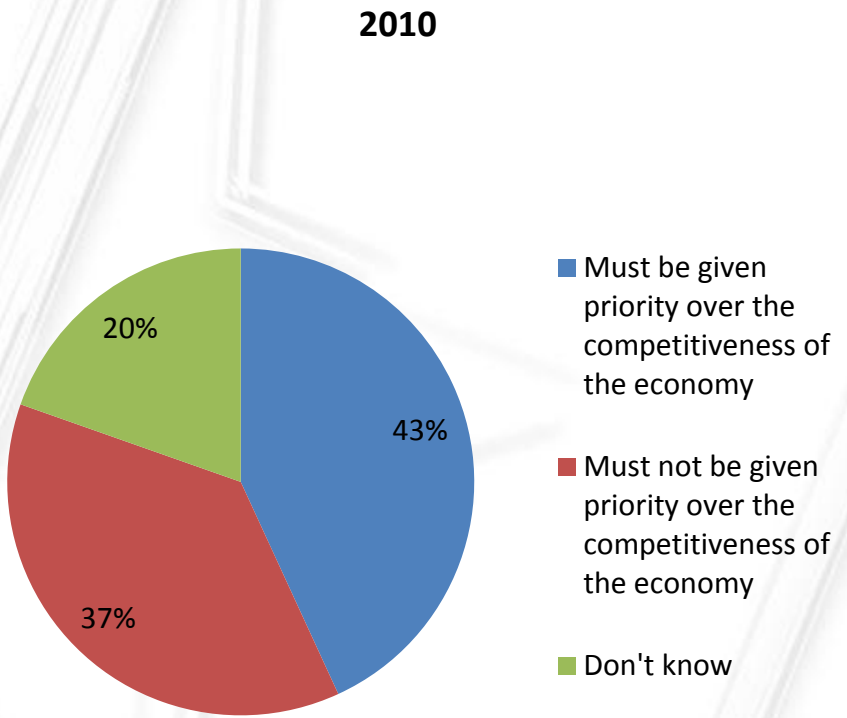
"I am happy to buy environmentally friendly products even if they cost a little bit more"?



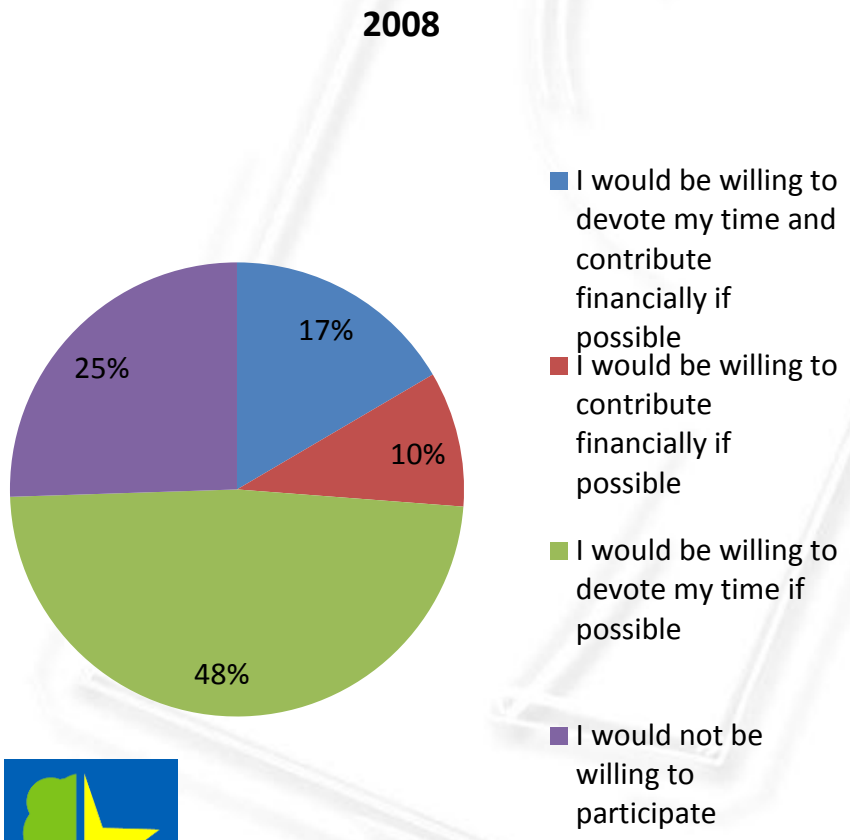


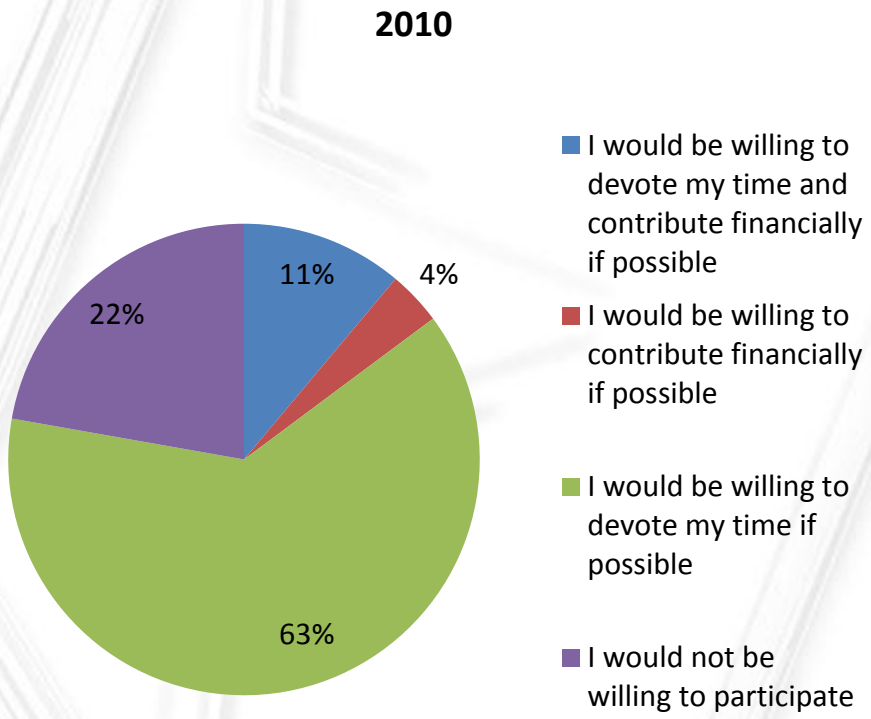
To which of the following opinions do you feel the closest? Environmental protection...





Express your willingness to participate in renewable energy or energy efficiency projects in your local community





Social case studies

- 6 retrofitted houses (householders)
  - Comparison before and after retrofitting
  - Possible issues and problems within the project
  - Overall satisfaction, main motivators, problems,…
- 6 contractors (retrofitters)
  - Level of engagement in SERVE project and related benefits of the project
  - Possible issues and problems within the project
  - Cooperation between contractors and households

Analysis of the project impact on job creation

- Construction, operation and maintenance of biomass plants
- Procurement, preparation, transport of biomass fuel

Site	Capacity (kWth)	Status	District Heating (Y/N)
Eco-Village, capacity	1,000	Installed and Operational	Y
Gurteen College, capacity	600	Installed and Operational	Y
Nenagh Pool, capacity	400	Installed and Operational	N
Nenagh Abbey Court	450	Not Progressing	N
Nenagh VEC	300	Final Decision	N

Analysis of the project impact on job creation - methodology

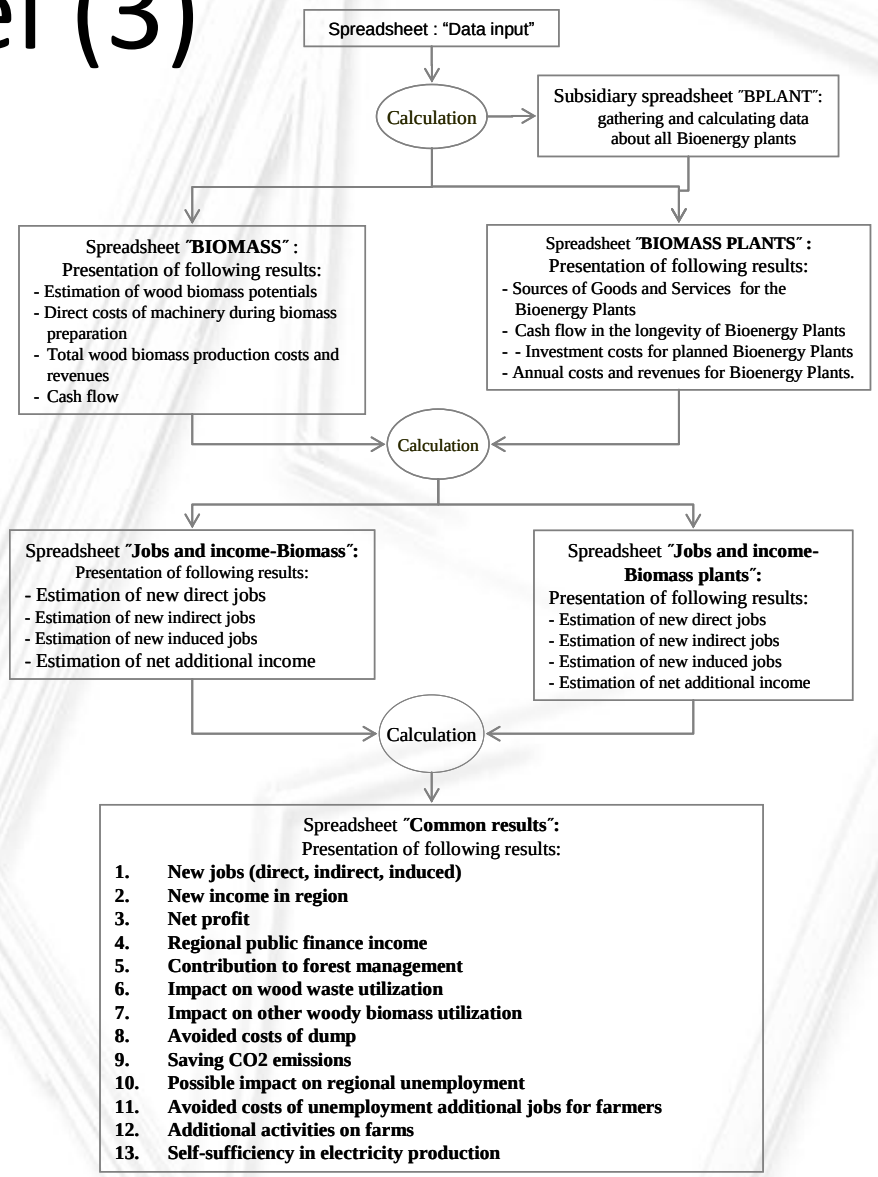
- SCORE model
  - Developed within IEA Bioenergy Task 29: Socio-economic Drivers in Implementing Bioenergy Projects
    - Version 1.0 in 2004, revised and extended in 2008
  - Applied/tested in several countries on different bioenergy projects (heat, cogeneration)
  - Recognised and proved tool SE analysis
    - KRAJNC, N., DOMAC, J. 2007. How to model different socio-economic and environmental aspects of biomass utilisation: Case study in selected regions in Slovenia and Croatia. Energy Policy, Volume 35, Issue 12: 6010-6020. Published in Energy Policy Special Issue *Modeling Socio-Economic Aspects of Bioenergy Use*

SCORE model (2)

- Based upon Keynesian multiplier theory
  - Initial increase/decrease in the rate of spending in a region results in a more than proportionate increase/decrease in income or employment
- Direct effect, indirect and induced multiplier
- Cumulative process (re-iterative spending)
- Regional multiplier
  - Within the region vs. 'leakage'

SCORE model (3)

- MS Excell based
- Some results:
  - Average annual net income,
  - Increased public income in the region,
  - Total number of direct jobs,
  - Total number of indirect jobs,
  - Total number of induced jobs,
  - Impact on regional unemployment,
  - Reduction of costs due to unemployment,
  - Additional direct jobs on farms,
  - Additional activities (indirect and induced) - private forest owners



Impact of SERVE project on creation of new jobs – preliminary results

- Gurteen College
  - Two high efficiency wood - chip boilers with installed thermal capacity of 600 kW
  - Investment costs - € 336.482
  - Concerto grant - € 84.420
  - Fuel source – wood chips from local sawmill (Noel Bailey)
  - Plan to grow and use own fuel supply (willow) from a college farm from year 2013
- Cloughjordan Eco village
  - Two high-efficiency wood-chip boilers with installed thermal capacity of 1.000 kW
  - Investment costs - € 981.279
  - Concerto grant - € 329.350
  - Fuel source - wood waste from a Midlands sawmill

Impact of SERVE project on creation of new jobs – preliminary results (2)

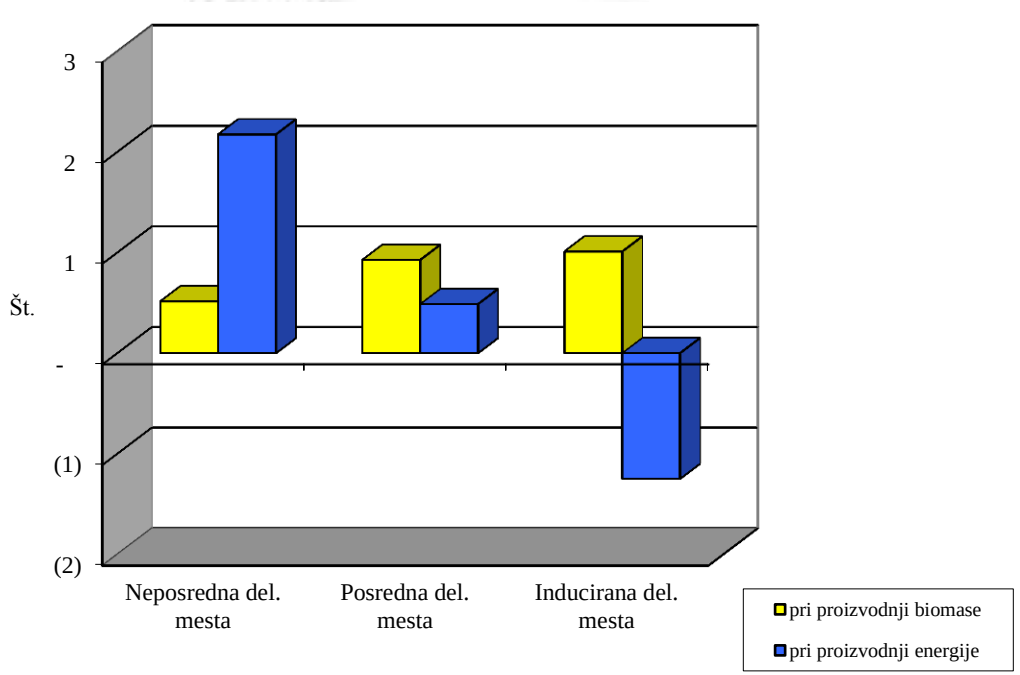
Impact on creation of new jobs

1. Process of biomass production

- Direct: 0,51
- Indirect: 0,93
- Induced: 1,01

2. Bioenergy plants

- Direct: 2,12
- Indirect: 0,49
- Induced: -1,25



Economic analysis of SERVE project measures in buildings sector

- Households retrofitting
  - Variety of measures (insulation, windows, boilers, controls, thermostatic valves,…)
- How successful project SERVE is?
- Interesting results in view of global financial situation
- Important lessons for future projects (SERVE region, Ireland and beyond)

Economic analysis - methodology

- Classic economic payback time calculation
- Data needed:
  - Investment costs
  - Energy performance of building before upgrading
  - Energy performance of building after upgrading
  - Energy costs
  - Source of investment

Economic analysis – preliminary results

- Number of analyzed retrofitted objects – 251
- Total investments – € 876.570
- Grants issued – € 428.221 – combination of SERVE and SEAI grants
- Total energy savings – € 106.167 per year
- 94% of buildings using fossil fuel
- Percentage of local manufacturers – from SERVE region: 10 - 40%

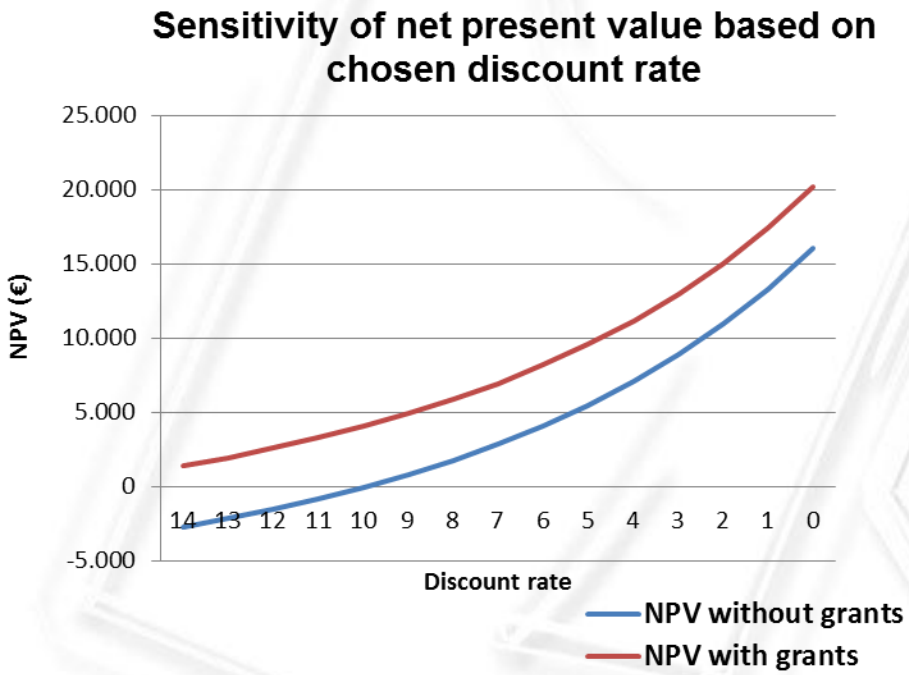
Economic analysis of RES/RUE measures

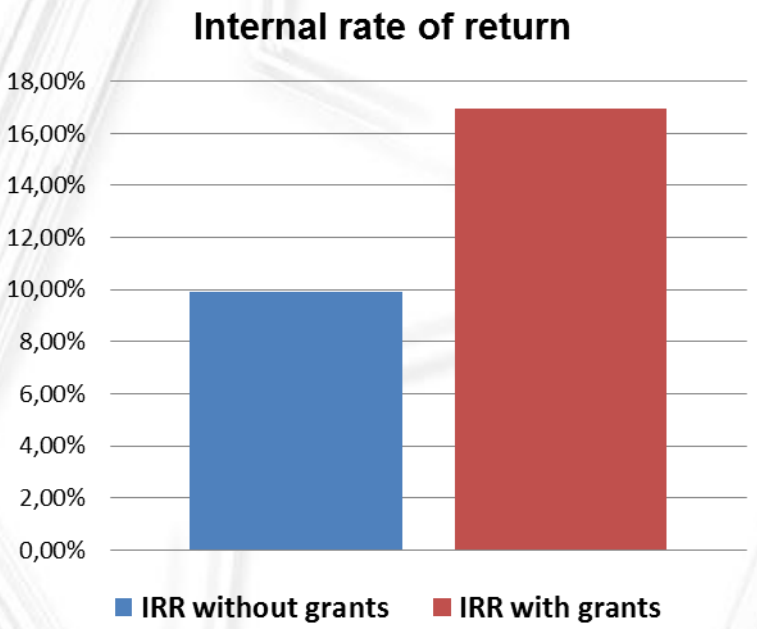
Example of one analyzed measure – House insulation

Indicators	**Value**
Total investment (€)	12.046
Grants received (€)	4.102
Energy savings (€/yr)	1.407
Discounted payback period (yr)	9,5
Discounted payback period with grants (yr)	6,5
Net present value (€)	2.860
Net present value with grants (€)	6.962
Internal rate of return (%)	9,92
Internal rate of return with grants (%)	16,94

Economic analysis of RES/RUE measures

Example of one analyzed measure – House insulation

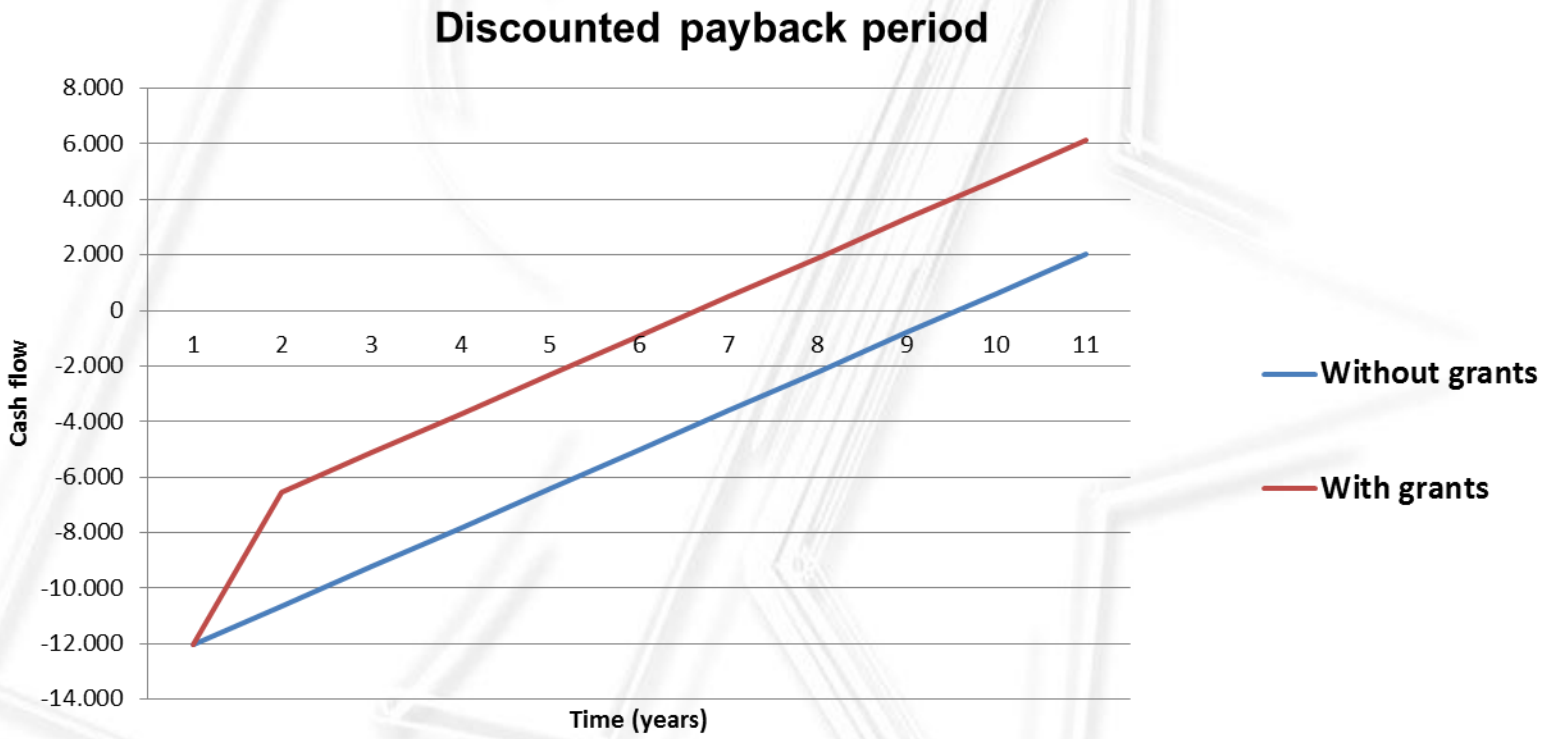




Investment profitability is far less sensitive towards chosen discount/credit rate and shows increased internal rate of return when combined with grants

Economic analysis of RES/RUE measures

Example of one analyzed measure – House insulation



Payback periods are significantly reduced with the use of grants (6,5 instead of 9,5 years)

Workplan for next 12 months

- Final version of deliverables
  - Analysis of the project impact on job creation
  - Local funding and money flows
  - Economic and financial parameters for SERVE project measures in buildings sector
  - Identification of opportunities for the development of ESCOs
  - Analysis of involvement of citizens, attitudes of building owners and consumers (3rd baseline survey)

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