

INFORSE-EUROPE
 International Network for Sustainable Energy



INTEGRATED APPROACH TO THE ENERGY PROBLEM (HEAT)

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http://www.inforse.org/europe/seminar09_Artefact.htm

INTEGRATED APPROACH :

SSM
Supply Side Measures
 (renewable fuel, better boilers, efficient distribution)

+

DSM
Demand Side Measures
 (insulation, carpentry retrofits)

COMES FIRST !!

DSM

ENERGY IS WASTED MOSTLY WHERE THERE IS NO MONEY TO INVEST IN ENERGY EFFICIENCY

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RISE

Renewable Energy Against Poverty

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 AGH University of Science and Technology

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Low Cost Measures include

- draught-proofing of window/door carpentry
- elimination of parts of overglazed surface
- installation of the radiator shields
- insulation of external walls using styrofoam plates
- management measures (closing the doors)
-

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**LOW COST MEASURES
OF SAVING ENERGY**

mean

- **Jobs (especially local)**
- Local economy
- Financial savings
- Improved comfort for low income families
- Climate change (CO₂ emissions)

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**Low Cost Heat Saving –
Examples of Concrete
Implemented Projects**

1992 – 2008+

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1. 4 multifamily buildings in **Krakow** (USAID) 1992-1994
2. individual buildings in different Polish cities, 1995-2002
3. 3 Primary schools in Kiev, **Ukraine** (USAID) 1996-1997
4. 2 Residential blocks, Handlova **Slovakia** (USAID) 1996
5. Lviv, Truskavets, **Ukraine** (USAID) 1997-1998
6. **Various buildings (USAID) 1997-00 in six Polish cities**
7. USAID projects in **Nuclear Cities**: (Russia) Zheleznogorsk (**Sibir**), Sniezhinsk (**Ural**) 2005-2006
8. **MONAR** Centres for homeless and drug addicted people in Poland 2007-08
9. **MONAR** ctd and extended 2009 -

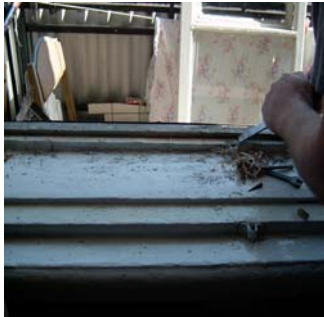
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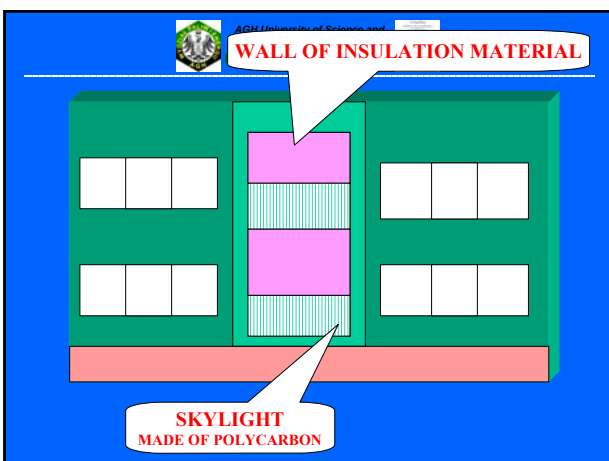
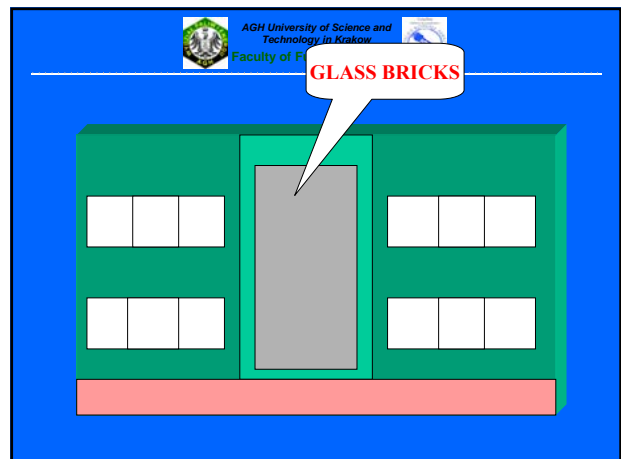


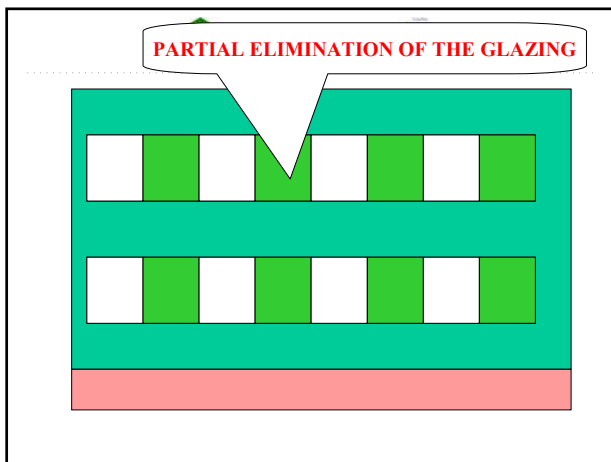
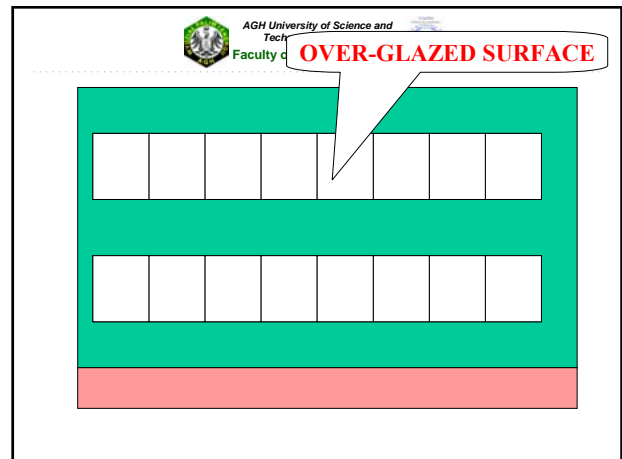
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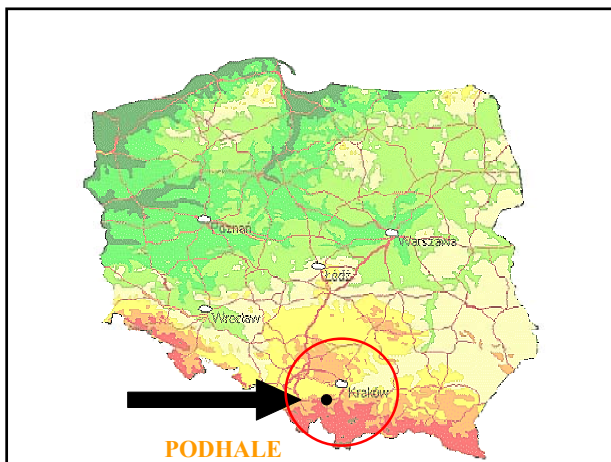

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Town	PEC [GJ/year]	PFS [thousand zloty/year]	PNJ	Unemployment [%]	Population of the town [thousands]
Krapkowice	240 265	6 007	151	5.0	20
Olsztynek	63 705	1 593	45	18.0	14
Lubań	71 847	1 796	73	6.4	24
Tzycianka	107 603	2 690	99	13.0	18
Nowy Sącz	579 706	14 493	469	5.2	84
Białystok	1 953 622	48 841	1 164	4.3	284


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SSM

BIOMASS



Podhale

(Jordanów, Bystra - Sidzina, Zawoja, Maków Podhalański)

About **900** small, scattered, timbermills and local wood-processing workshops, producing ca **60 000 t** of excessive wood waste (eqv. to ca **20 000 t** of coal)

Mostly imported wood !!! (Ukraine, Romania)





Wood-waste available for sale					
Village	Number of workshops	Volume of potential sales	Volume sold currently	Volume left for sale	% of workshops that have signed contracts
Juszczyn	27	20 570	20 570	0	18,5
Sidzina	230	33 800	60	33 740	0
Wieprzec	7	14 090	14 090	0	42,9
Toporzysko	40	320	320	0	0
Naprawa	6	550	250	300	0
Wysoka	5	60	60	0	0
Osielec	44	16 500	16 380	120	9,1
Jordanów	10	5 130	820	4 310	10
Łętowia	12	300	300	0	0
Maków Pod.	30	3 110	610	2 300	3,3
Kojszówka	30	17 200	14 000	3 200	13,3
Grzechynia	35	1 900	1 900	0	2,9
Zawoja	42	3 300	420	2 880	0
Bystra	66	18 460	3 550	14 910	0
Biała	38	21 300	20 700	600	10,5
Zarnówka	25	15 500	12 590	2 910	8
TOTAL	647	172 090	106 820	65 270	4,6

Heat demand

Jordanów-city:	2 x 2 MW = 4 MW (space heating, winter) 0.7 MW (hot water, summer)
Sidzina:	0.9 MW (space heating, winter)
Bystra:	0.7 MW (space heating, winter)

FINANCING

GEF:	20%
Commercial investor:	30%
Municipalities (PPP):	10%
Ekofundusz & Regional Env. Prot. Fund:	40%

projected revenue

Annual heat sales:	48 TJ
Heat price:	9.90 USD/GJ
Revenue:	475 000 USD

**INTEGRATED APPROACH
TO THE USE OF WOOD WASTE FOR
SPACE HEATING IN POLAND**

SSM

Supply Side Management
(fuels, boilers, distribution)

DSM

Demand Side Management
(insulation, carpentry retrofits..)
COMES FIRST !!

GEF GRANT : 975 000 USD

Included:

- Establishing a PPP Co.
- Wood-waste collection and storage system
- Energy audits (DSM)
- Low cost DSM measures in project buildings
- Storage facility and boilers installation
- Dissemination

Project development history

- **September 1997**, project concept submitted to the GEF
- **1998**, application for PDF-A submitted to the GEF
- **January 1999**, PDF-A grant approved
- **January 2000**, PDF-A phase completed
- **October 2000**, submission of the Project Brief
- **March 18th, 2001**, final approval of the Project Brief
- **August 13th, 2001**, LPAC meeting

- **January 2002**, DiIRT nominated as Executing Agency
- **February 2002**, Steering Committee established
- **May 2002, FEWE (project proposer) eliminated**
- **June 21st, 2002**, Project agreement signed between UNDP, Polish government and the new IA
- **June 2002**, declared start of Project implementation
- **June 2005**, declared end of Project implementation
- **2002... 2006** ?????? (consultants' services, consecutive feasibility studies)
2 typical small boilers (ca 100 kW) installed
No DSM !!
instead success story brochures published
- **2006 final dissemination seminar (?)**
(no questions, no discussion allowed)