The Gelsenkirchen case:
Catalyzing industrial Transformation with clean Energies

Heinz-Peter Schmitz-Borchert, Science Park Gelsenkirchen, sb@wipage.de
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a) How did Gelsenkirchen decide to 'turn coal back into sunshine?

"With a high dependence on the traditional industry sectors, the crisis hit Gelsenkirchen and the neighbouring communities exceptionally hard. Since 1960, Gelsenkirchen has lost more than 30% of its population. This trend will continue at least for the next two decades: projections carried out by the State of North-Rhine Westphalia expect a further 16% decrease between 2005 and 2025 - the highest in the Ruhr region (average decline of 9.3%).
Environmental degradation became a public issue as early as late 1950s when lung cancer rates doubled due to significant declines in air quality. During the early 1960s, dust emissions from coking plants, steel mills and coal fired power plants led to permanent grey skies and frequent smog situations. The goal of restoring "the blue sky above the Ruhr" (a phrase coined by Chancellor Willy Brandt during the election campaign in 1961), initiated the start of environmental policy in Germany….

….When considering that the built environment accounts for approximately 40% of Europe's total energy consumption this is an important area for climate protection (EC DG TREN 2003). To reduce greenhouse gas emissions (GHGs) in communities, strategies should be developed for housing estates, districts and the whole city level. Clean energy solutions can be designed for residential buildings, office and industrial buildings, also considering integration with local transport and waste strategies into holistic concepts. Previously a coal mining and steel production hub, with more than half the workforce employed in these sectors until the 1960s, the City of Gelsenkirchen is now on a track towards a clean energy future. This future is based on utilising renewable energy sources (RES) and improving energy efficiency (EE). A key element of the city's urban planning policy is to explore and implement clean energy options in particular for the revitalisation of coal mine brownfields and the renewal of buildings connected to the coal mine industry. ……Developing clean energy concepts for both the redevelopment of
industrial brownfields and for the renovation of old building stock is thus a key element of climatefriendly urban planning policies in such cities.
….During the late 1980s, when industrial decline was at its peak and unemployment rates rose to 17%, the local government together with the State Government of North-Rhine Westphalia conceived the idea to steer the structural change into a new, positive direction while also addressing the roots of economic development in the region, namely energy. Thus Gelsenkirchen, the *energy city*, the *city of a thousand fires* should instead become the *city of a thousand suns* - a *solar city*. The main goal was to create new business and employment in a modern industry sector and to improve the image of the whole region in order to attract investment capital and skilled labour, not only in the energy sector.The starting point for the new programme was an idea to build a modern technology park - Science Park
(Wissenschaftspark) Gelsenkirchen - on the land of a former steel foundry close to the city centre. The idea was first conceived in 1989, and linked to the development of the Internationale Bauaustellung (IBA) Emscher Park – a 10 year multi-billion Euro investment programme for the regeneration of the whole Ruhr region, with individual projects co-funded largely by the state of North-Rhine Westphalia and the European Union.

More info:
From industrial area to solar area - the redevelopment of brownfields and old building stock with clean energies. Wolfgang Jung, Armin Hardes and Wilhelm Schröder (2010): In: Maryke Van Staden; Franceso Musco (Eds.): Local Governments and Climate Change. Sustainable Energy Planning and Implementation in Small and Medium Sized Communities. Springer,Heidelberg.
Full article: http://www.solarstadt-gelsenkirchen.de/fileadmin/solarstadt/Medienspiegel/2009-05-15-Solar_City_Gelsenkirchen.pdf

b) How far has the city come in delivering on its "No more carbon / Solar City"-pledge?
Implemented: PV Industry, Large scale demonstration projects, 4 solar housing estates, awareness campaigns, etc. Roughly 20% reduction of CO2-emissions (1990-2007).

Who funds it?
EU (structural funds for regions with high unemployment rates / Target II) combined with federal and state level and local funding. For Renewable Energy Projects: German Renewable Energy Act (Feed in law).

c) Jobs / New Skills?
Up to 1,000 new jobs in industry, engineering, installation/maintenance sector within 10 yrs.
Required skills in renewable energy jobs were partly met by training programmes for former miners/unemployed people.