



مركز الملك عبدالله للدراسات والبحوث البترولية
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Energy Productivity in Buildings

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**At first we shape our buildings then our buildings shape us
– Winston Churchill**

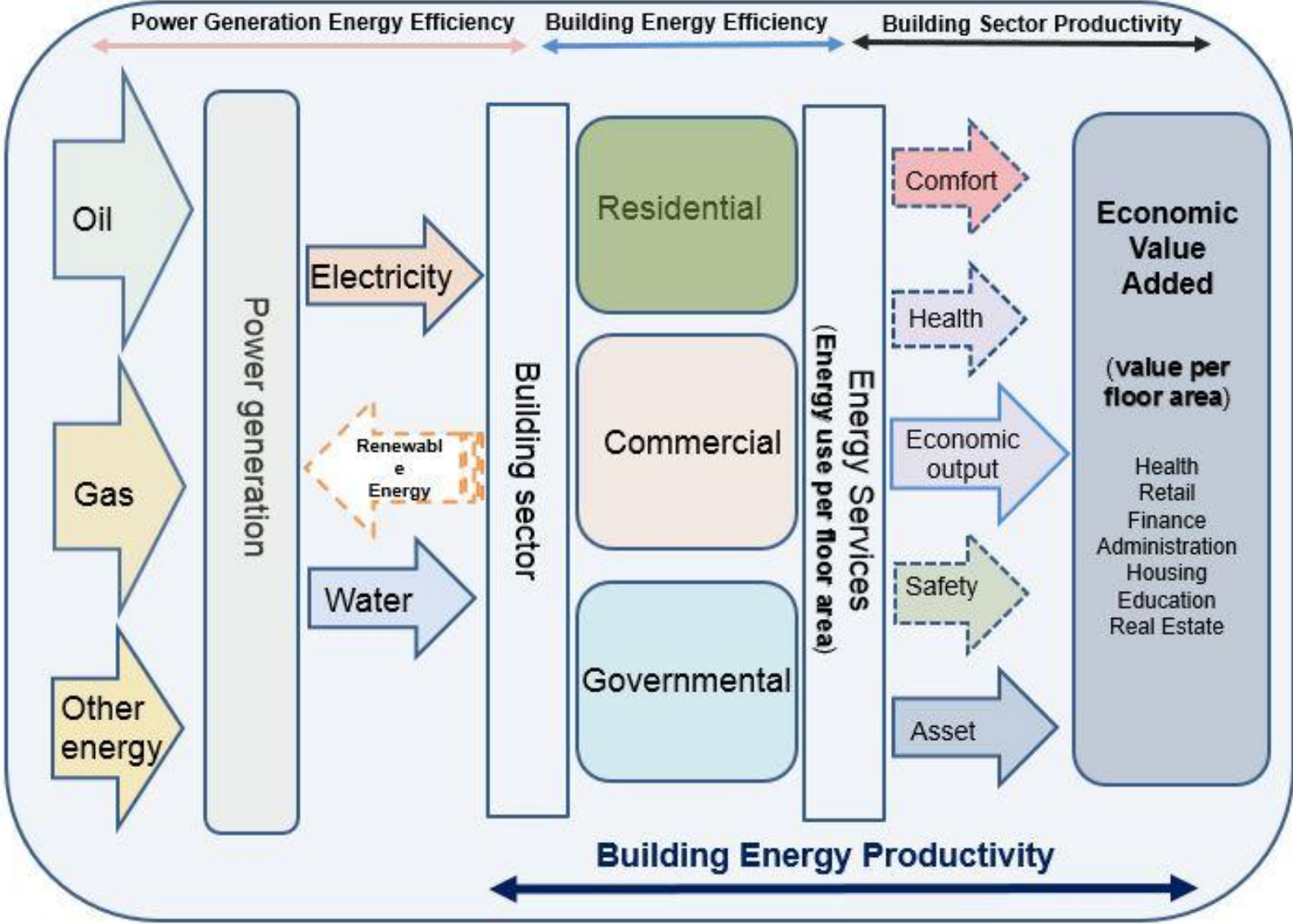
Energy productivity

Energy efficiency can be measured for a conversion device i.e. the useful energy out as a proportion of the total energy in but similar conversion cannot be applied for passive system such as buildings.

Improvements in Energy Efficiency are generally mirrored by improvement in productivity of other resource use.

The process for improving energy efficiency or reducing energy input for a given output is a process for technical or behavioral change that is driven by technological, financial, management, social and political drivers and constraints

Building Sector Energy Productivity



Benefits of following Productivity approach

Social benefits – Creating jobs, reducing pollution and strengthening national security

Buildings are future hub of energy storage , energy production, also key to supplying more better, cheaper and safer energy to all. Intelligent buildings can perhaps store electricity.

Building energy efficiency – opportunities and challenges

Problems of high energy consumption in buildings actually offers some tangible opportunities to profit from new business initiatives, drive innovation and save money.

Energy efficiency efforts must tackle two powerful trends ;

- more buildings are built and
- more uses are added

Energy efficiency requires upfront funding

Approach towards developing energy productive buildings

Market based approach

- Counter building inefficiencies with transdisciplinary insight and entrepreneurship – need problem solver mind to engage in energy efficiency
- Make energy use more transparent- real time energy use and price signals
- Create market awareness on cheaper and smart technologies available
- Trained and educated high quality work force
- Upgrade to next generation building energy efficiency policy and align utility incentives - set targets which in turn help entrepreneur
- Begin overhauling how building design is done, target and built – integrative designs

Policy based approach

- Making information available – disclosure of building energy use
- High quality timely data
- Local directives- energy star labels, energy passport for buildings
- Incentive mechanisms
- Energy performance standards – compliant
- Mandatory banking facilities such as, Green Finance

Way forward

Buildings can become magical spaces that create delight when entered , health and serenity when occupied and remembered when departed

Our buildings will at last become not just shells we live in but truly worthy of who we are and whom we aspire to become

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