LOW ENERGY LIFESTYLES FOR SUSTAINABLE LIVING: Promoting Conscious and Efficient Energy consumption

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Though energy is the world's dominant industrial force, addressing sustainable energy for all requires an interdisciplinary approach. This includes contributions from Design, Engineering, Sociology, Policy making, and Economy. The intersection of these fields is key to developing sustainable solutions.
By promoting Low-Energy Lifestyles for efficient and conscious energy consumption
How can we improve Energy Efficiency?
Energy Production

Renewable Energy

Efficient and Conscious consumption

Non-Renewable Energy

Energy wastage
Efficient and Conscious Energy Consumption

Energy Production

LESSER DEMAND

LESSE WASTE

Efficient and Conscious Energy Consumption
Efficient and Conscious Energy Consumption

Lesser waste of valuable resources

BETTER IMPACT ON ENVIRONMENT AND SOCIETY
Promoting Low Energy Lifestyles for efficient Energy Consumption through “Systems Oriented and Design Thinking Approach”
Understanding Energy systems of India
Research and Analysis

**Primary research**
- Research through internet, white papers and books
- Research on energy systems, numbers and figures on world energy consumption, study on India’s energy situation

**Secondary research**
- Visiting Gujarat Vidyapith University, Mega Trends Road Show (Ahmedabad), Renewable Energy Expo (Noida)
- Discovering ongoing activities in the domain of renewable energy solutions at the ground and community level and technological level.

**Ethnography Study**
- One on one informal interviews
  - Talking to people from various socio-economic backgrounds, aided by various design methods and toolkits, mapping behaviour patterns and usage trends

**Data Analysis and Insight Collation**
- Studying data, identifying patterns, gaps and opportunities
  - Running parallely
“Day in a life of person” – People from different socio-economic background were asked about their 24 hours average activity cycle.
Diversified socio-economic backgrounds suggested different behaviour patterns and thoughts about Energy consumption.

Energy saving is perceived as sacrificing comfort and luxury, and in some cases safety as well.

Energy ‘talk’ is limitedly perceived to ‘My home, My lights’.

Money matters, it is a big driving factor and motivator.

While the energy is used by multiple people, the paying of bills, looking at meter reading etc. generally is done by a single person.

The whole aspect of “If I don’t live comfortably now, then when?” is intrinsically linked to the amount and the way energy is used.

Habits encouraged during childhood become engrained and change the perception of energy usage.

Living in joint families doesn’t necessarily mean than ‘same’ activities were done together.

The major driving factors observed were: Money, ease of use and social image.

Environment and surroundings play a major role in our habits.
Identifying Personas

Different “Personas” were identified and categories were formed on the basis of following identified factors:

**Awareness** (about efficient energy consumption)

**Willingness** (to switch to smarter and conscious energy consumption habits)

**Choices Available** (financially or geographically)
Learning from Case-studies

Case-studies helped in understanding the global perspective around Sustainable Living and different kinds of work happening around Low-Energy lifestyles in various contexts.
Influential factors related to Energy Consumption

From all the research and analysis, different factors influencing Energy Consumption were identified. These factors were in a way affecting the users and the Energy systems.

The factors were grouped into 5 main categories:

- Social
- Regional
- Political
- Economical
- Technological
To identify the factors with higher priority and influence, all the factors were interlinked on the basis of their impact on every other factor.

This figure here shows all the interlinkages between the factors related to energy consumption.

The most dynamic factors were the ones which:
1. Impacted most number of other factors
2. Were impacted by most number of other factors.

Categories
- Social
- Regional
- Political
- Economical
- Technological
For example, here, this figure shows the interlinkages of all the factors of technology category with other factors.
POLITICAL
REGIONAL
Forming the Impact Board

An impact board was created with the most influential factors found, towards the centre and the least influential factors towards the periphery.

**Choices, Community Connectedness, Prices of Energy, Habits and Rate of Development** are few of the most influential factors (most prominently dominant factors).

If a solution was found to be impacting either of these dominant factors, it would positively impact a maximum number of other factors due to a ripple effect.
If I don't live comfortably now, then when (can I)?

Being sustainable means I will have to sacrifice some comfort (and status, in some cases) while others might not do so.

Do my actions contribute to any differences...? “

Energy saving is perceived as sacrificing comfort and luxury

Key Insights and Learnings

Energy saving is perceived as sacrificing comfort and luxury

“If I don't live comfortably now, then when (can I)?”

“Being sustainable means I will have to sacrifice some comfort (and status, in some cases) while others might not do so.”

“Do my actions contribute to any differences...? “

Major Action Triggers and Motivators

Things that enables one to get ‘right action at the right time.

Receiving feedback about actions performed to save energy

Doing things together is a bigger motivator than saving money

Involvement of children
Key system design oriented questions:

1. How could children (and people) today become the flag-bearers of this clean, sustainable energy economy?

2. How could small inspiring examples of sustainable energy living people and places today inspire others and help them adopt and scale up such practices?

3. How could people with an access energy transition to better cleaner, sustainable energy models and people without basic energy be able to access clean, safe and continuous energy?
Proposed Concepts and Solutions
Feedback Methods

through personal energy management

**WHAT**
- real time data access through phone
- programmable, smart devices
- customizable alerts (for time, frequency etc.)
- real time date for community
- a subset of energy doctor

**WHY**
- need for regulating consumption
- real time information to facilitate awareness

**IMPACT**
- awareness & comparison
- trigger for a self conscious initiative
Feedback Methods
through energy bills

WHAT
- price centric energy bill
- energy tips linked to prices
- long term consumption graph
- a helpline linked for personalized information (energy doctor)
- mid-month alerts

WHY
- need to create awareness through feedback
- need for regulating consumption

IMPACT
- awareness and comparison with society
- possible increase in community connectedness
- trigger for self-conscious initiative
- use of data for energy providers
Providing Incentives

to imbibe a low energy lifestyle

WHAT

- need for curiosity and motivation
- long term potential in changing behaviour

WHY

- energy credits earned
- can be availed on energy star appliances, green energy infrastructure, public transport, waste management

IMPACT

- motivation
- accelerate the transition to sustainable cities
- greener lifestyles
- rise of service systems, competitions, regulations, infrastructure
ADOPT A HOME

WHAT
- deficit in energy consumption as compared to average is donated to house
- collection and donation of energy handled by a social organisation

WHY
- need for ‘Giftivism’ or a feel good
- driver for energy
- energy inclusion

IMPACT
- attempt at energy inclusion
- philanthropic drive
- might create role models out of donators
- new emerging services (transport/ storage/ maintenance, etc.)

DONATING HOMES

RECEIVING HOME
Crowdfunding platforms
for low energy innovations

WHAT
- innovation workshops
- online camps
- get social innovators to team up with people
- involving businesses and educational institutions

WHY
- social innovation & entrepreneurship
- mutual interest of the community
- power in numbers: community connectedness

IMPACT
- Creative independency
- less reliance on established sources for financial sources
- community driven actions, hence they will be customized as per the community
- stakeholder involvement
- new emerging business models
Energy Credits
energy banking

WHAT
- energy credits from reduction in usage will be used for shared systems
- earnings through these services will be spent on smart energy choices

WHY
- to make energy an asset
- to make shared spaces accessible through energy credits

IMPACT
- community connectedness
- enhancing the value of energy
- smarter energy choices by the community
- new emerging services
Emulating Role Models

WHAT
• creating platforms where role models can share low energy lifestyle habits
• encouraging other people of the community to inculcate habits of

WHY
• being inspired from people following low energy lifestyles
• giving them recognition, inspiration and

IMPACT
• causing a ripple effect
• increased awareness spreading across age groups
• creating community connectedness
• involving role models in community action and policy
Education Models

WHAT
- co-create classrooms all over the world
- green energy habits of senior citizens can be shared with younger audience
- drives with school children
- toolkits to educate builders,

WHY
- children as potential audience have an impact to change
- ingraining right values at the right age

IMPACT
- causing a ripple effect
- increased awareness spreading across age groups
- influencing choices of choice influencers
Gamification

**WHAT**
- set of cards (cause and effect) for children
- interaction design
- augmented reality

**WHY**
- need to generate interest
- for an increase in curiosity and enthusiasm

**IMPACT**
- causing a ripple effect
- increased awareness spreading across age groups
- influencing choices of choice influencers
Community Competitions

**WHAT**

- innovation workshops
- online camps
- get social innovators to team up with people
- involving businesses and educational institutions

**WHY**

- social innovation & entrepreneurship
- mutual interest of the community
- power in numbers: community connectedness

**IMPACT**

- Creative independency
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- new emerging business models
Sharing Personal Products
idling capacity

WHAT
- at transport
- shared workspaces
- shared products and services
- renewable farms

WHY
- access to
- getting the most value out of products
- affecting choices

IMPACT
- community connectedness
- increase in green lifestyles
- decrease in the number of appliances
- new emerging services
Solution Testing
Gamifying Education for school students
elementary and middle school students are at an impressionable age and thus, more open to forming new habits which last.

They carry a potential to spread their acquired knowledge about smart energy consumption starting with their own family, thus starting a ripple effect of change.

On each trump card is a way to consume energy efficiently or reduce wastage, which is rated on two parameters, eco-friendliness and amount of energy that can be saved.

The game work exactly like any usual trump card game, but aims at making using energy consciously
Education Models
For Appliances Salesmen
To educate salesmen in appliance shops about guiding the customers correctly into buying the right appliances for their homes.

The set of cards designed for the salesmen have information regarding the energy usage of the appliances, like energy star ratings etc.

Basically it's a tool for helping the customers to make a right choice, according to their “requirement”
Conclusion

1. Make people more conscious and contribute to the whole sustainable living individually and at the community level, by making everyone realize their individual responsibility towards sustainability.

2. All the energy produced (renewable/non-renewable) gets efficiently consumed, targeting for minimal waste.

3. Empathizing with the consumers of energy and deriving underlying insights from their thoughts and actions were the key drivers in coming up with solutions which were eventually found to be effective.

4. People and their behaviour, habits, choices and perspectives regarding energy consumption were decided to be the main point of focus in this project.

5. People and their decisions are what will largely influence the system towards a better future and hence these consumers of energy should be what the solutions concentrate on.
Thank You.

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Project Blog:
https://energysystemsnid.wordpress.com/