

A green concern
Greenenergy

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WHEN EVERY SURFACE BECOMES AN ENERGY SOURCE ?

The future of energy may not be built in power plants — it may be built into everything around us.

Imagine walking through a city where the roof above your head generates electricity, the glass beside you captures sunlight, the road beneath your feet produces power, and even a bus shelter contributes energy to the grid.

This is no longer just a futuristic idea.

We Invent Technology. Nature Invented Us





1.ROOFS → THE FIRST POWER PLANT OF EVERY BUILDING

Roofs are among the most obvious surfaces for renewable energy because they receive sunlight for much of the day.

Traditional rooftop solar panels can already turn unused roof areas into electricity-generating spaces. But the future goes further.

Building-integrated photovoltaics (BIPV) can become part of the roof itself, replacing conventional roofing materials while generating electricity.

A school roof that powers its classrooms.

A factory roof that generates part of its production energy.

An apartment building that produces electricity for its common

The roof is no longer just a roof.

It becomes an energy asset.



2. WALLS → TURNING **BUILDING** FACADES INTO POWER GENERATORS

Modern photovoltaic technology can be integrated into **building facades, balconies, sunshades and external walls.**

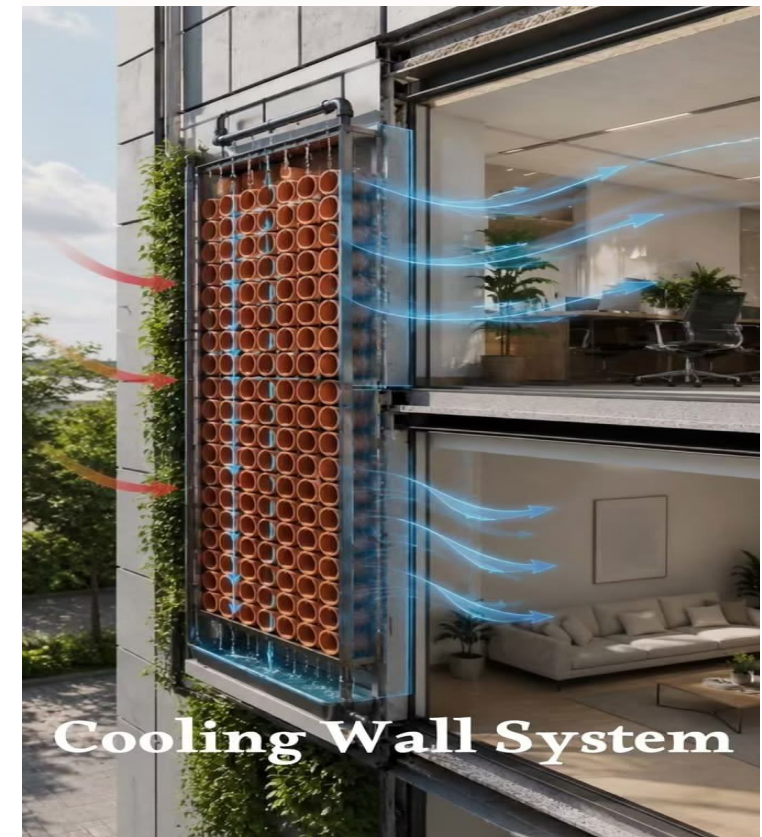
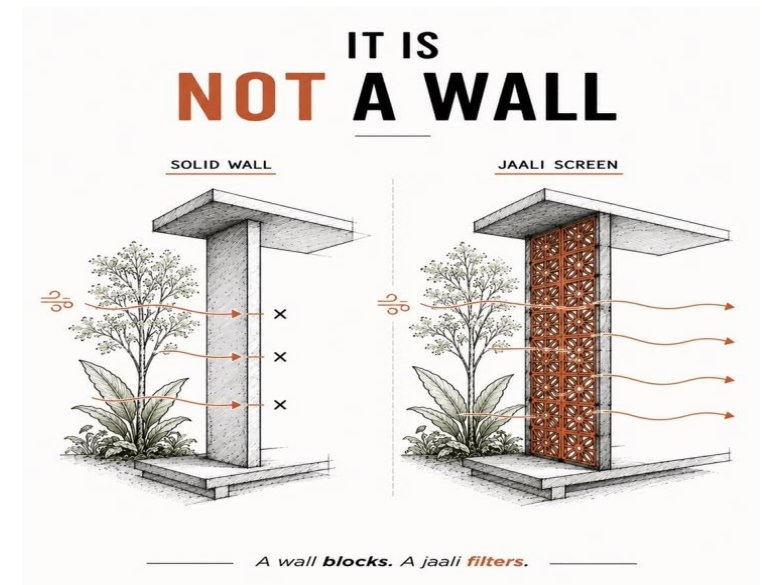
Instead of adding solar panels as an afterthought, architects can design the building envelope itself to participate in energy generation.

The future facade could combine:

Sun protection + daylight + aesthetics + insulation + electricity generation

This creates a new design philosophy:

The facade is no longer only the face of a building — it can become part of its power system.



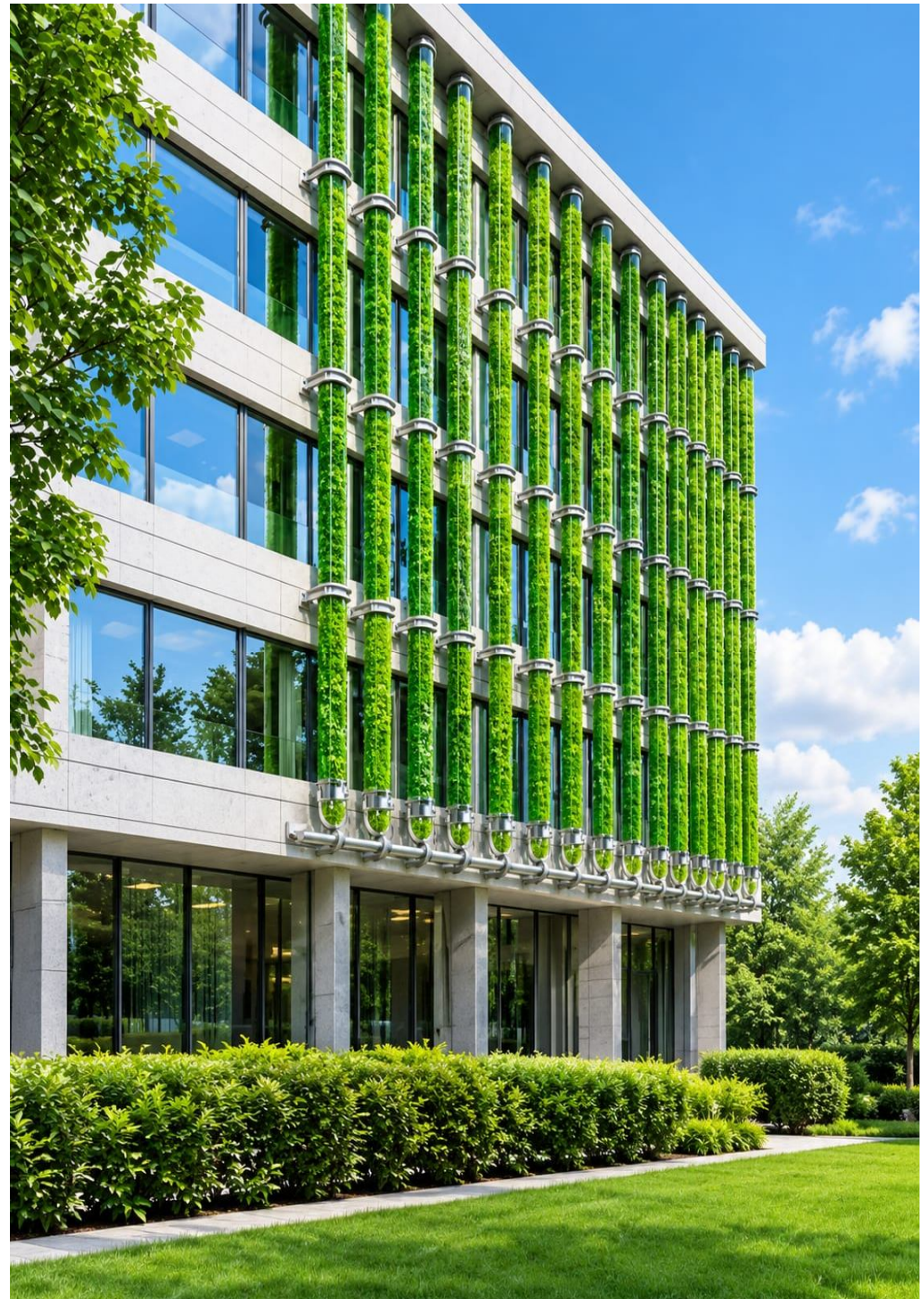
3. GLASS → WINDOWS THAT GENERATE POWER

An office tower where thousands of square metres of glazing contribute to the building's electricity production.

- Transparency
- Daylight
- Solar generation
- Heat gain
- Building comfort
- Cost

Therefore involve designing glass not simply as a material, but as an **energy-generating building component**.

Algae Tube on buildigs to produce biofuel-generating energy and absorbing CO₂ –at the same time.



04. ROADS → CAN INFRASTRUCTURE GENERATE ENERGY?

❖ Future Highway Where:

☀️ **Solar elements generate electricity**

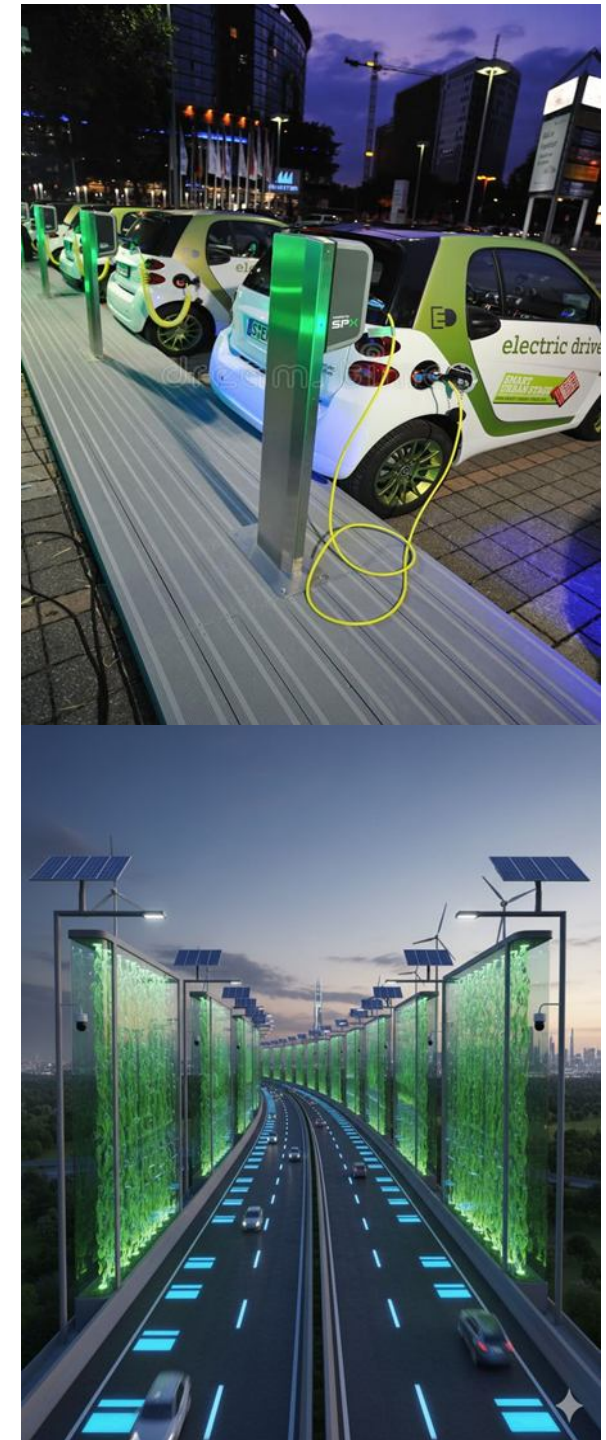
Electric vehicles charge along the journey

Road lighting uses locally generated energy

Smart infrastructure communicates with vehicles

The road could evolve from something that simply **moves people** into infrastructure that also **supports the energy network**.

However, road-integrated solar faces major practical challenges such as durability, shading, maintenance, dirt, traffic loads and cost.



Easy wiring
for a street



Easy installation
no wiring needed



No hours
and greens



Up to hours
continuous lighting



05. PAVEMENTS → ENERGY FROM EVERY STEP

Kinetic energy harvesting technologies attempt to capture small amounts of energy from movement, vibration or pressure.

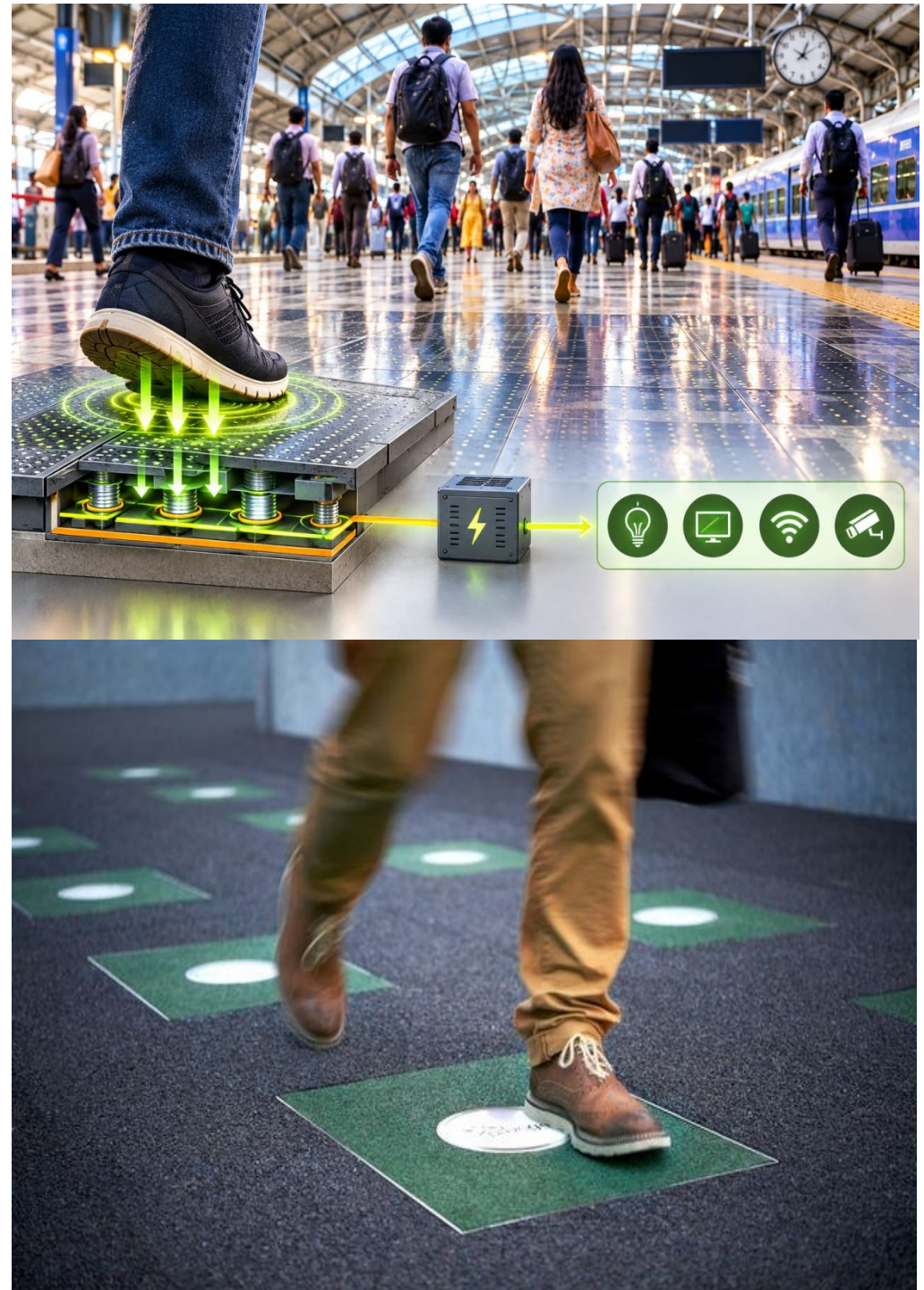
Each step produces a tiny amount of energy.
One person's footsteps may not mean much.
But:

**A million footsteps are a different story.
Best applications could include:**

- Interactive public spaces
- Transit stations
- Exhibition centres
- Stadiums
- Smart campuses
- Public installations

The goal isn't necessarily to replace a power plant.

Instead, the idea is to create **small, local sources of energy for sensors, displays, lighting and smart-city systems.**



06. FURNITURE → THE CITY'S SMALLEST POWER PLANTS

A future **solar-powered smart bench** could potentially provide:

Now imagine thousands of such objects distributed throughout a city.
The result is a network of **small distributed energy nodes**.

The principle is simple:
The city itself becomes the energy infrastructure.

☀️ **Solar electricity**

Battery storage

USB/device charging

Night lighting

Wi-Fi /communication functions

Environmental monitoring



07. WHAT ABOUT RAIN?

Solar isn't the only energy available around us.

Buildings constantly interact with **rain, wind, temperature differences and vibration**. Researchers are exploring technologies that can harvest energy from these environmental interactions.

For example, experimental systems investigate how the movement and impact of water droplets can generate small electrical signals.

This doesn't mean that rainwater will soon power your entire house.

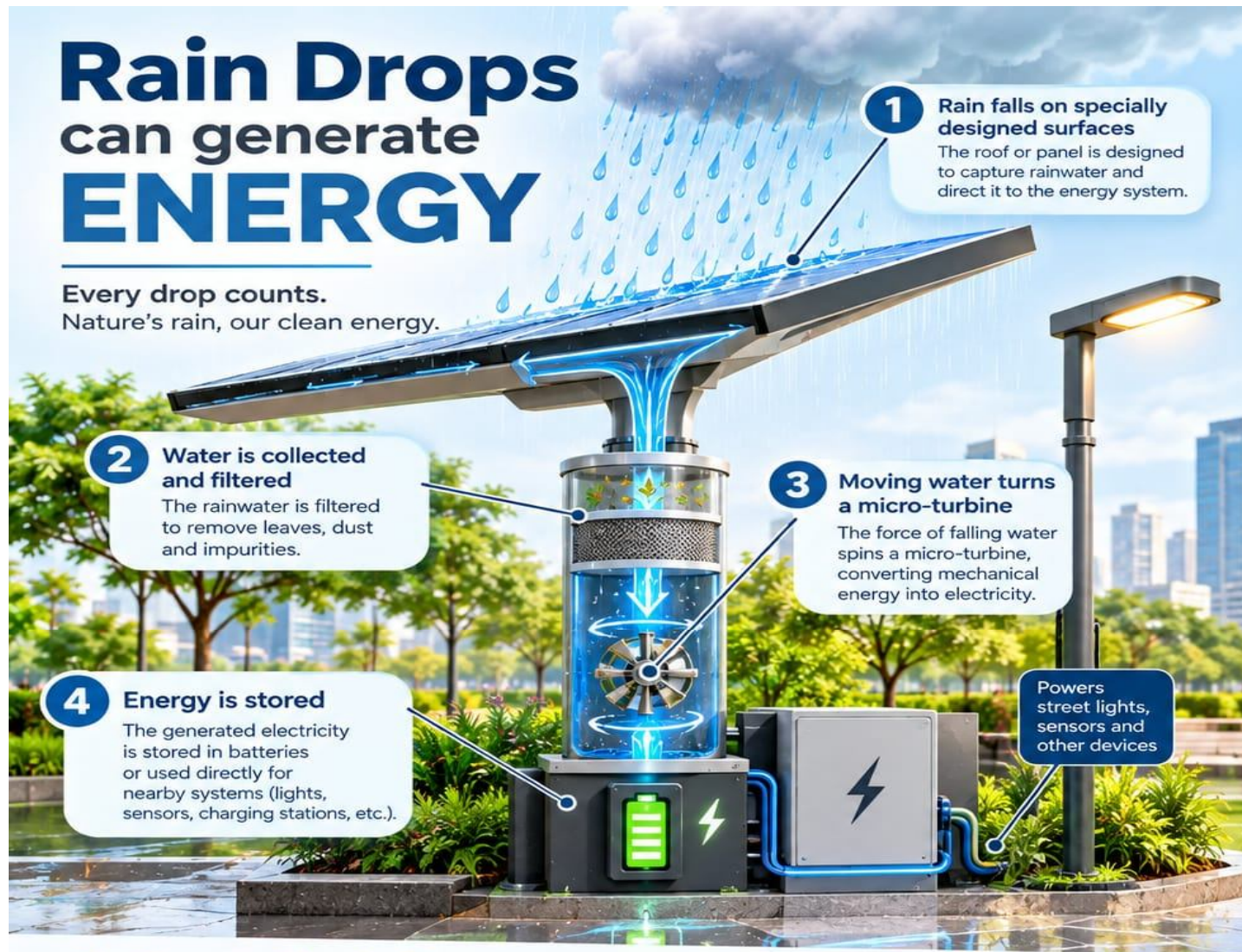
But it opens an important idea:

**Nature is constantly moving around us.
Can we capture a fraction of that energy?**



Rain Drops can generate **ENERGY**

Every drop counts.
Nature's rain, our clean energy.



Where it can be used?



Street Lights

Illuminates public spaces



Sensors

Monitors environment and smart systems



Charging Stations

Powers e-vehicles and devices



Buildings

Supports nearby facilities



Off-grid Areas

Provides clean energy where grid is unavailable


**Turning rain
into a cleaner,
brighter future.**

The Process – Step by Step



Rainwater + Innovation = Clean Energy

08. HEAT → THE ENERGY WE THROW AWAY

One of the biggest overlooked energy resources is **waste heat**.

Buildings, factories, data centres, vehicles and machines continuously produce heat.

Instead of allowing all of it to disappear into the environment, technologies such as heat recovery systems and thermoelectric devices can potentially convert or reuse some of this energy.

Think about a data centre.

Computers consume electricity.

Electricity becomes computation.

Computation produces heat.

Instead of simply rejecting that heat into the atmosphere, a future system could potentially **recover and reuse it**.

This creates a powerful circular concept:

**ENERGY → WORK → HEAT →
RECOVERY → USE**



09 THE CITY AS ONE GIANT ENERGY SYSTEM

The most exciting possibility is not a single energy-generating roof or pavement.

It is the **combination of everything**.

Imagine a future neighbourhood:

➤ **Buildings**

Generate electricity through roofs and facades.

➤ **Windows**

Contribute through photovoltaic glazing.

➤ **Roads**

Support smart energy infrastructure.

➤ **Pavements**

Harvest small amounts of kinetic energy.

➤ **Street furniture**

Uses solar power for lighting and sensors.

➤ **EVs**

Store electricity and return power when required.

➤ **Batteries**

Store surplus renewable energy.

➤ **AI**

Coordinates the entire system.

Suddenly, the city is no longer simply a consumer of electricity.

The city becomes a distributed power plant.



THE CITY AS ONE GIANT ENERGY SYSTEM

Buildings, people, mobility, infrastructure and nature are not separate — they are connected. Together they form a city-wide energy system, working in harmony for a cleaner, smarter, more resilient tomorrow.

CLEAN ENERGY + SMART SYSTEMS +
GREEN SPACES = A SUSTAINABLE CITY



CLEANER AIR
Less pollution,
healthier lives



ENERGY SECURITY
Local, renewable,
reliable



WATER RESILIENCE
Conserve, reuse,
restore



GREENER SPACES
Biodiversity,
better living



STRONGER COMMUNITIES
Connected, inclusive,
future-ready

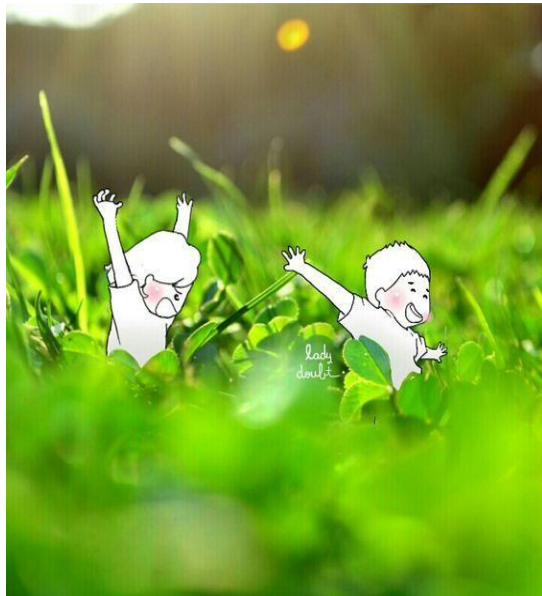


CIRCULAR ECONOMY
Reduce, reuse,
regenerate

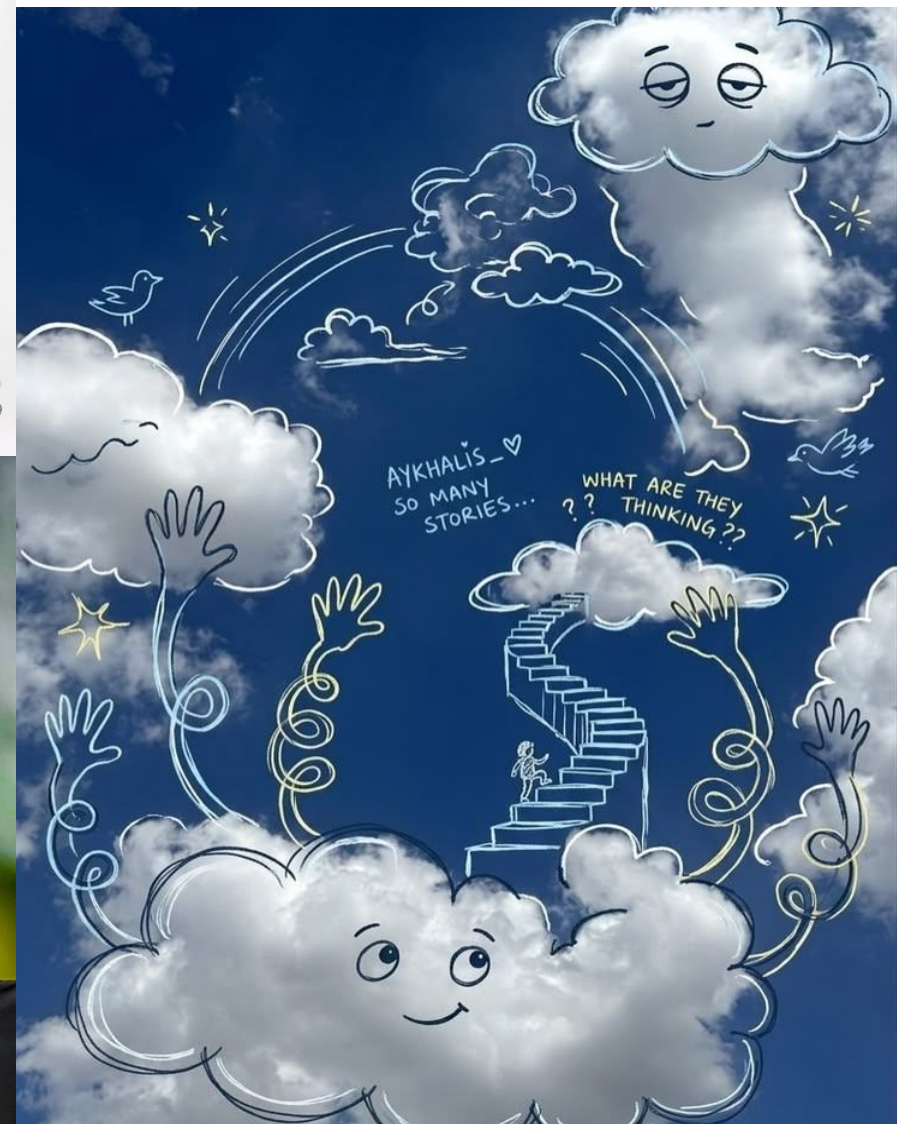


A SUSTAINABLE TOMORROW
For generations
to come

10. FROM ENERGY CONSUMERS TO ENERGY PRODUCERS



Towards a future where every space gives something back to the planet.





Abhalmaya
FOUNDATION

— Love for Nature Beyond Infinity —

Together
we make
nature's dreams
come true...



Thank
You

for being a part of
our journey towards
a greener, healthier and
brighter tomorrow.

A greener
tomorrow
begins with
small actions...



TREE
PLANTATION



BLOOD
DONATION



EDUCATION &
LITERATURE



CYCLE
RALLIES



SCHOLARSHIPS



ENVIRONMENT
AWARENESS



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