RENEWABLES NOW

RENEWABLE ENERGY IN CITIES AND DEMAND SECTORS

BUILDINGS, INDUSTRY, TRANSPORT, AGRICULTURE

Hend Yaqoob hend.yaqoob@ren21.net





WHO WE ARE



OUR APPROACH TO DRIVE CHANGE

REN21 PILLARS



Position knowledge strategically, build on the REN21 community and their roles, **engage** with usual and unusual suspects to **change norms**.



TRACKING RENEWABLE ENERGY TRENDS

CROWD-SOURCED DATA SINCE 2005





THE ANNUAL GSR COLLECTION

REPORTING ABOUT THE BUILDING BLOCKS OF THE RENEWABLES SYSTEMS



Renewables in Energy Demand

- Buildings
- Industry
- Transport
- Agriculture



Upcoming Modules:

- Renewables in Energy Supply
- Energy Systems and Infrastructure for Renewables
- Economic and Social Value Creation with Renewables
- Global Overview



RENEWABLE ENERGY IN CITIES AND END-USE SECTORS



THE ENERGY TRANSITION IS NOT HAPPENING FAST ENOUGH

RENEWABLES UPTAKE UNEVEN ACROSS POWER, HEATING & COOLING AND TRANSPORT

Renewable Energy in Total Final Energy Consumption, by Final Energy Use, 2019



Urban policies, decentralised renewable energy and other enabling technologies emerging in cities are key to decarbonise highpolluting sectors.

Source: Based on IEA data.

REN21 RENEWABLES 2022 GLOBAL STATUS REPORT



POLY-CRISES OR MOMENTUM?

FROM A POLY-CRISES TO A MOMENTUM



WHAT CHANGED IN 2022?





Energy Crisis was further exacerbated by Russian Federation invasion of Ukraine in February 2022



Energy prices reached their highest levels since 2008, impacting all energy-consuming sectors

Starting in October 2021, rapid economic rebound following COVID-19 led to tighter energy markets





High inflation became a global phenomenon during 2022





THE ENERGY TRANSITION IS NOT HAPPENING FAST ENOUGH

RENEWABLES UPTAKE UNEVEN ACROSS DEMAND SECTORS

.

Total Final Energy Consumption and Total Modern Renewable Energy Consumption, by Sector, 2020



Total renewable energy consumption in all 4 demand sectors grew 4.7% per year on average between 2010 and 2020

REN21 RENEWABLES 2023 GLOBAL STATUS REPORT - RENEWABLES IN ENERGY DEMAND



GLOBAL ENERGY TRENDS

RENEWABLE AS AFFORDABLE AND SECURE SOLUTION IN RESPONSE TO POLY-CRISIS





RESPONSE OF ENERGY CONSUMERS



DRIVERS AND OPPORTUNITIES FOR RENEWABLES IN CITIES

ECONOMICS, GEOPOLITICS AND SECURITY IN FOCUS

Clean air and a healthy environment		Reducing expenses and managing costs	Local economic development	Industrialisation and innovation
	Poverty alleviation and improved energy access		Climate change mitigation and adaptation	Energy justice, security and sovereignty



RENEWABLE ENERGY IN BUILDINGS

ONE THIRD OF THE WORLD'S ENERGY CONSUMPTION IS USED IN BUILDINGS



In 2020, renewables provided 15.5% of the energy used in buildings.

Buildings in Focus



RENEWABLES IN BUILDINGS GROWING SLOWLY

THE SHARE OF RENEWABLES IN BUILDINGS SLOWER THAN GLOBAL RENEWABLE ENERGY SHARES

Renewable Share of Total Final Energy Consumption in Buildings, 2010, 2019 and 2020



Buildings is the largest energy consuming sector, accounting for 33% of total final energy consumption.



CITY GOVERNMENTS SUPPORT RENEWABLES WORLDWIDE

DEVELOPMENTS VARY BY CITY AND DEPEND ON THE LOCAL CONTEXT



Number of Cities with Renewable Energy Targets, by Region and Sector, 2020 and 2021

More than 1,500 cities have a renewable energy target or policy in 2021, up from 1,300 in 2020.

🗱 REN21 RENEWABLES 2022 GLOBAL STATUS REPORT



HOPEFUL INTEGRATION OF RENEWABLES IN CITIES

NUMBER OF CITIES WITH RENEWABLES TARGETS AND OR POLICIES IS PROGRESSING



Cities are home to around **55% of the** world's population. Energy use in cities accounts for threequarters of global final energy use.

REN21 RENEWABLES 2022 GLOBAL STATUS REPORT

Note: Calculations based on population in cities with renewable energy targets and/or policies and their share of the national population. Excludes cities with energy efficiency, electric vehicle and/or net zero targets. Data not available for some countries.



REGULATIONS IMPACT HOW RENEWABLE ENERGY IS USED IN BUILDINGS

ONLY 40% OF COUNTRIES HAD MANDATORY BUILDING ENERGY CODES IN 2022

ijį,

Regulatory Policies in Buildings, by Building Type, as of End-2022



At least **21 countries** announced new or revised regulatory policies for buildings by the end of 2022.



CITY POLICIES TO SUPPORT RENEWABLES IN BUILDINGS

MOST MEASURES FOCUS ON SOLAR ROOFTOP RENEWABLES

Urban Renewable Energy Policies in Buildings, by Type, 2021





Note: Data should not be compared with previous years, due to revisions and adjusted methodology. Fossil fuel bans are categorised as enabling policies.

🎉 REN21 🛛 RENEWABLES 2022 GLOBAL STATUS REPORT



Transport contributes

GDP and employs 5.6%

to 7% of global

of the global

workforce.

RENEWABLE ENERGY IN TRANSPORT

FASTEST-GROWING ENERGY CONSUMPTION, BUT RENEWABLES STILL BEHIND





RENEWABLE ENERGY IN TRANSPORT LAGGING BEIND

LOWEST RENEWABLE ENERGY SHARE AMONG SECTORS

<u>"</u>

Renewable Share of Total Final Energy Consumption in Transport, 2010, 2019 and 2020



Transport energy demand increased 7.8% in 2021 but was still 6.6% below pandemic level.

The use of **renewable** electricity grew by 7.1% in 2021 exceeding prepandemic level by 11.9%



GROWING SUPPORT FOR ELECTRIC TRANSPORT

ELECTRIC VEHICLE TARGETS AND ICE BANS NEED RENEWABLE ENERGY TARGETS AND POLICIES







CITY TRANSPORT SHIFT TO MORE RENEWABLE

PRIVATE VEHICLES ACCOUNT FOR MOST OF THE ENERGY DEMAND AND EMISSIONS FROM URBAN TRANSPORT





Only Barcelona, Bristol, Shanghai and Stuttgart have implemented LEZs and passed vehicle bans.

🚀 REN21 🛛 RENEWABLES 2022 GLOBAL STATUS REPORT



RENEWABLE ENERGY IN INDUSTRY

INDUSTRY AFFECTED MOST IN ENERGY CRISIS



Industry in Focus



Industry contributes to 25% of global GDP and employs 25% of the global workforce.

REN21 RENEWABLES 2023 GLOBAL STATUS REPORT - RENEWABLES IN ENERGY DEMAND



RENEWABLE ENERGY IN AGRICULTURE

MAIN REASONS: ENERGY SAVINGS, FUEL COST REDUCTION, AND ACCESS TO ENERGY

Agriculture in Focus



The agriculture sector contributes to USD 4.2 trillion of global GDP and employs 26% of the global workforce.



THE ANSWER OF GOVERNMENTS



MIXED SIGNALS

MORE POLICY DEVELOPEMENT REQUIRED





BUILDING ON THE MOMENTUM

ENERGY DEMAND SECTORS NEEDS TAILORED ATTENTION

- Governments need to develop sectoral targets, policies and roadmaps for buildings, industry, transport and agriculture
- There is no time for mixed messages:
 - Phasing out fossil fuel subsidies for level playing field
 - Include support of use of renewables in **short term policy** answers to crisis
- Energy supply, energy systems and infrastructure need to respond to the increase of renewable energy demand in all end-use sectors





REN21 Secretariat

www.ren21.net



RENEWABLES NOW