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New Research Shows Proposed Coal Expansion Will Cost Major Cities USD 877 Billion, Cause Quarter-of-a-Million Premature Deaths, Jeopardize Climate Goals

Analysis of 61 C40 cities shows strong action to phase out coal and expand renewable, zero-carbon energy could save thousands of lives and create up to 6.4 million jobs worldwide by 2030.

London, United Kingdom (September 29, 2021) – New analysis from C40 Cities, offers compelling new data that underscores the dire human and economic costs of continued global expansion of coal-fired electricity.

Measured against the Paris Agreement's 1.5°C threshold, C40's research shows that existing coal policies and proposed expansion plans may result in **264,900 premature deaths by 2030, costing cities \$877 billion over the next 10 years.**

C40's latest report, [*Coal-free cities: the health and economic case for a clean energy revolution*](#), models the cumulative impact of currently-operating coal-fired power plants, those scheduled for retirement, and anticipated plant openings across 61 C40 cities impacted by air pollution. These plants represent 68% of the world's total coal plant capacity.

The study, produced with support from the Centre for Research on Energy and Clean Air, Vivid Economics, and The Center for Global Sustainability at the University of Maryland, emphasizes that a rapid phase-out of coal, coupled with a full transition to clean, renewable energy, is necessary to meet the goals of the Paris Agreement and avoid global climate catastrophe. The report highlights that the global energy transition also represents an enormous opportunity to save hundreds of thousands of lives and **create up to 6.4 million jobs worldwide within the decade.**

"The data is clear: To stave off climate change, grow the economy, protect public health, and save lives, we must phase out coal entirely – as quickly as possible," said **Michael R. Bloomberg, President of the Board of C40 Cities and UN Special Envoy for Climate Ambition and Solutions.** "Bloomberg Philanthropies has helped lead the fight against coal for years, and we need even more national and local leaders to join us. As the world takes on climate change at COP26, phasing out coal – and launching an equitable transition to clean energy – must be a top priority."

The Health and Economic Costs of Coal

While renewable energy sources are cheaper than fossil fuels in many parts of the world, and knowledge of air pollution's health consequences is greater than ever, demand for coal-fired electricity remains at a record high. Currently, global coal projects under active construction and in the pre-development phase account for 481 GW of capacity – a figure that exceeds the combined coal power capacity of both the United States (233 GW) and the European Union (143 GW).

C40's analysis of existing coal plant retirements and expansion plans show that 42 of the 61 C40 cities included in the report will see coal power capacity increase within 500km, or just over 300 miles, of their borders.

Because pollution and particulate matter from coal-fired power plants can travel long distances, these cities will bear the burden of significant increases in air pollution and greenhouse gas emissions driving the climate emergency. According to C40's research, the most significant upsurge in coal capacity, and resulting increases in carbon pollution, will impact developing nations, including China, India, Bangladesh, and Vietnam.

If current plans for coal expansion are realized, C40 cities may see up to 264,900 premature deaths attributed to air pollution by 2030. The study also shows that residents of the 61 cities analyzed may experience a variety of other negative health outcomes tied to air pollution, including **121,100 preterm births**; **93,600 new asthma cases** among children; and **247,900 emergency room visits** connected to complications from asthma.

C40's findings also show workers are expected to take a total of **124 million sick days** over the next 10 years due to illnesses caused by air pollution, amounting to an estimated economic impact of **USD 10 billion**.

Phasing out coal: An economic opportunity for cities

While the scale of action needed to achieve a transition to 100% clean, renewable energy will be dramatic, the global energy transition is a key opportunity for both local and national governments to create jobs and bolster their economies.

C40's research models employment figures associated with a rapid phase-out of coal and compares the current trajectory for coal-fired power plants with anticipated outcomes of a clean energy transition. Findings show that up to **6.4 million jobs**

could be created by accelerating the transition to clean renewable energy in line with the Paris Agreement's goal to limit global temperature rise to 1.5°C. That amounts to 1.1 million more jobs than would be expected under a “business-as-usual” scenario.

Additionally, all 61 C40 cities analysed will see more jobs created through transitioning their electricity supply to green, low-carbon sources, even those located in countries responsible for a significant share of global coal consumption:

- In the **United States**, a transition to 100% clean, renewable energy in line with the 1.5°C target could result in **10-27% more jobs**. Greening the electricity that supplies **New York City**, for example, could see up to **93,000 jobs created**.
- In **India**, a transition to 100% clean, renewable energy in line with the 1.5°C target could result in a **18-27% jobs increase**. **Bengaluru** may see a cumulative total of **124,000 jobs created**, while Mumbai could reach up to **249,000 jobs created**.
- In **Japan** and **South Korea**, a transition to 100% clean, renewable energy in line with the 1.5°C target could result in job increases of **20%**, **10%**, and **32%** in **Tokyo**, **Yokohama**, and **Seoul**, respectively.
- European C40 cities **Moscow**, **Istanbul**, and **Warsaw** could respectively see **216,000 jobs (10% increase)**, **88,000 jobs (21% increase)**, and **34,000 jobs (38% increase)** created by a transition to 100% clean renewable energy.
- C40 cities in **South Africa** are expected to see the greatest proportional increase in jobs from a transition to 100% clean, renewable energy. **Ekurhuleni**, **Johannesburg**, and **Tshwane** may experience job increases of **70-84%**, with **Ekurhuleni** expected to see **23,000 jobs created**, and **Johannesburg** expected to see **78,000 jobs created**.

Local Action, Global Progress: How Cities Can Accelerate the Clean Energy Transition

In response to both the climate emergency and air pollution crisis, mayors are taking bold, ambitious action to set science-based targets compatible with meeting the goals of the Paris Agreement and reducing carbon pollution from buildings, energy, transport, and other economic sectors.

While national governments must play an active role in enabling the rapid phase-out of coal and investing in 100% clean, renewable energy, cities can

accelerate the global energy transition through a variety of policies and measures aimed at cultivating ideal conditions for a clean energy future.

C40's report outlines several recommendations for cities seeking to support the energy transition, and includes real-world examples from cities leading the charge towards a more sustainable, resilient future.

1. **Close city-owned fossil fuel infrastructure.** Cities like Los Angeles are taking steps to close coal- or fossil fuel-powered plants it directly owns or co-owns.
2. **Block and ban coal.** Cities can challenge fossil fuel assets by taking action to block or ban coal-fired power plants and supporting infrastructure. In Oakland, for example, the city voted to ban storage and handling of coal within the city's jurisdiction.
3. **Regulate and price emissions and pollution.** Since 2010, Tokyo has operated a cap-and-trade system, through which it mandates CO2 reductions from large commercial and industrial buildings to support the shift away from coal-generated electricity.
4. **Take shareholder action.** City governments can assess their roles as shareholders and shift towards more sustainable investment strategies. Within the C40 network, 14 cities have currently committed to divest their pension funds from fossil fuels.
5. **Shift municipal consumption to renewable energy.** Cities like Houston and Yokohama have taken steps to power municipal facilities with 100% clean, renewable energy.
6. **Aggregate energy demands to broker better deals.** Municipal leaders can partner with other large energy consumers to negotiate better agreements and spur energy providers to support clean energy goals. In 2017, Melbourne partnered with other consumers to purchase clean electricity as part of a 10-year contract with Pacific Hydro.
7. **Actively participate in energy regulation and policy processes.** Cities can influence the development of policies and regulations governing the electricity sector through Public Utility Commissions (PUCs).
8. **Support consumers' switch to clean, renewable energy.** San Francisco and Boston have organized community choice aggregation programs, which help consumers switch to clean, renewable sources of electricity at their homes and businesses.

9. **Champion a clean energy future.** Cities can utilize their broad influence to engage a broader set of stakeholders, such as national and regional government leaders, in conversations about the transition to clean, renewable energy.
10. **Reduce demand.** Cities can reduce overall electricity demand to cut immediate demand for coal, including by pursuing measures to improve energy efficiency. In Washington, DC, the city's Building Energy Performance Standards (BEPS) set stringent energy efficiency targets for large and small commercial and housing buildings.
11. **Use city assets for clean energy projects.** Quezon City has installed solar photovoltaic (PV) rooftop systems on 50 local public schools.
12. **Assess local potential for renewable energy.** Durban's Solar Map program allows local residents to estimate potential costs and savings of installing solar panels.

This study was funded by Wellcome.

For more information about C40's report, *The health and economic case for phasing out coal in C40 cities*, please visit [HERE](#).

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About the C40 Cities Climate Leadership Group

C40 is a network of nearly 100 mayors of the world's leading cities who are working to deliver the urgent action needed right now to confront the climate crisis and create a future where everyone, everywhere can thrive. Mayors of C40 cities are committed to using a science-based and people-focused approach to help the world limit global heating to 1.5°C and build healthy, equitable and resilient communities. Through a Global Green New Deal, mayors are working alongside a broad coalition of representatives from labor, business, the youth climate movement and civil society to go further and faster than ever before. The current Chair of C40 is Mayor of Los Angeles Eric Garcetti; and three-term Mayor of New York City Michael R. Bloomberg serves as President of the Board. C40's work is made possible by our three strategic funders: Bloomberg Philanthropies, Children's Investment Fund Foundation (CIFF), and Realdania.

About Wellcome

Wellcome supports science to solve the urgent health challenges facing everyone. We support discovery research into life, health and wellbeing, and we're taking on

three worldwide health challenges: mental health, global heating and infectious diseases.