

PUBLICATION

- Policy Brief
- Climate
- International Development
- Energy
- Health

Black Carbon Emissions from Kerosene Lamps

POTENTIAL FOR A NEW CCAC INITIATIVE

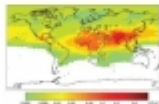
Black Carbon Emissions from Kerosene Lamps Potential for a new CCAC Initiative

Why black carbon and kerosene lamps?

Around 1.3 billion people worldwide still lack access to electricity. For many, kerosene remains a common lighting fuel that is affordable (due in part to government subsidies) and available.¹ Kerosene lamps emit both carbon dioxide (CO₂) and black carbon. Black carbon is the result of incomplete combustion of fossil fuels, biomass, and biomass. Black carbon particles absorb sunlight and heat the atmosphere, increasing radiative forcing, and are a major climate warmer, second only to CO₂.² Together with other pollutants having a powerful but short-lived warming influence, it is known as a "short-lived climate pollutant" (SLCP).³

New research has shown that kerosene lamps are significant sources of atmospheric black carbon and emit 20 times more than previous estimates, with 7.6% of fuel burned converted into black carbon particles.⁴ Other major sources of black carbon, such as other household biomass, organic carbon that may have an offsetting cooling effect, kerosene lamps emit almost entirely black carbon and CO₂, both of which cause warming. At least 270,000 tons of black carbon per year is estimated to be emitted from kerosene lamps worldwide, having a climate warming equivalent close to 240 million tons of CO₂, or roughly 4.5% of the United States' CO₂ emissions.⁵ The warming impact of black carbon emissions from kerosene lamps is highest around source regions, reaching 0.5 watts per square meter.

Figure 1. Global BC radiative forcing from residential kerosene lighting (PW/m²)



Reprinted from: "Residential Light Sources Emit More Black Carbon Than Previously Thought"

¹Lee et al., "Residential Light Sources Emit More Black Carbon Than Previously Thought"

²Lee et al., "Residential Light Sources Emit More Black Carbon Than Previously Thought"

³Lee et al., "Residential Light Sources Emit More Black Carbon Than Previously Thought"

⁴Lee et al., "Residential Light Sources Emit More Black Carbon Than Previously Thought"

⁵Lee et al., "Residential Light Sources Emit More Black Carbon Than Previously Thought"

[1]

Althoug
h
acti
on
is
alre
ady
bein
g
take
n
to
tran
siti
on
fro
m
ker
ose
ne
lam
ps
to
mod
ern,
clea
n
ligh
ting
alte
rnat

ives
,
mor
e
wor
k is
nee
ded.

This policy brief contains recommendations for action from the Climate and Clean Air Coalition (CCAC) that would enhance existing efforts and achieve more rapid black carbon reductions and climate benefits. The policy brief is available for download.

Attachments

-  Policy Brief: Black Carbon Emissions from Kerosene Lamps

Main Link

[Policy Brief: Black Carbon Emissions from Kerosene Lamps \[pdf, 262 KB, English\]](#)

Ecologic Related Articles

- Black Carbon Emissions from Kerosene Lamps
- Black Carbon Emissions from Kerosene Lamps - Study

Citation

Tedsen, Elizabeth 2013: Black Carbon Emissions from Kerosene Lamps. Potential for a new CCAC Initiative, Berlin: Ecologic Institute.

Language

English

Author(s)

Elizabeth Tedsen JD
Andrew Eberle
Elizabeth Zelljadt

Funding

- Clean Air Task Force (CATF), United States

Publisher

- Ecologic Institute, Germany

Year

2013

Dimension

8 pp.

Project

Black Carbon Emissions from Kerosene Lamps

Project ID

Table of Contents

Why black carbon and kerosene lamps?
Important co-benefits for health and development
Target regions
Existing landscape

- Lighting and energy initiatives
- Market growth and development

What could the CCAC do?
Conclusions and next steps

Keywords

climate change, energy, black carbon, SLCP, lighting, solar, health, development, CCAC, Sub-Saharan Africa, South Asia

Source URL (modified on 08/23/2018 - 11:00): <https://www.ecologic.eu/10233>

Links

[1]
<https://www.ecologic.eu/sites/files/presentation/2013/Cover-Brief-Black-Carbon-Emissions-from-Kerosene-Lamps.jpg>