

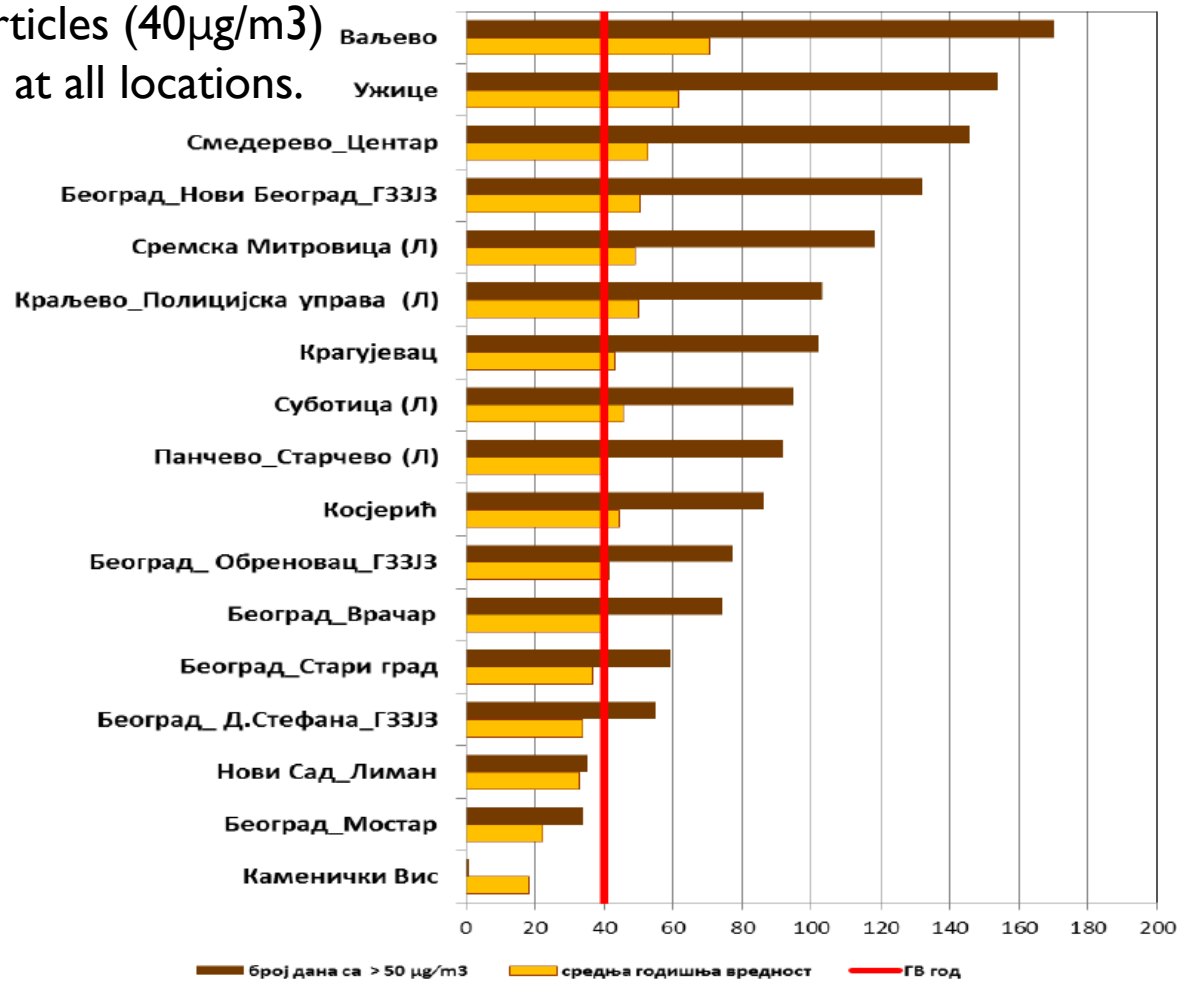
HEAT OR BREATHE



Res Foundation
Partnerships
for Resilience

SOFIA 10 MARCH 2020.

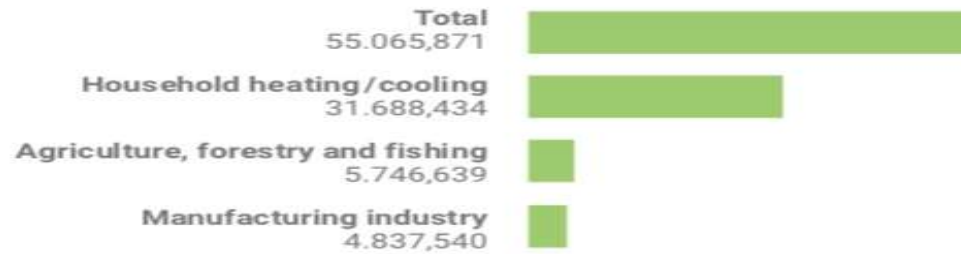
In 2018, the annual limit value for suspended particles ($40\mu\text{g}/\text{m}^3$) was exceeded at all locations.



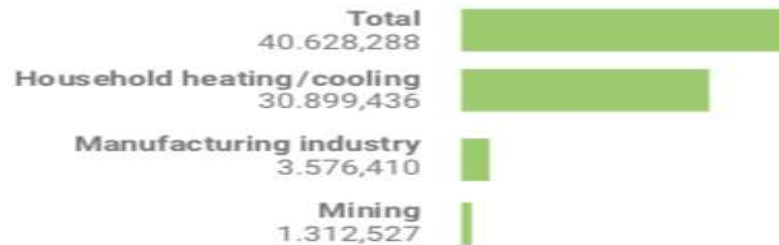
EVERYWHERE

AIR QUALITY

Total emissions of **PM₁₀** and three major categories of **PM₁₀** sources (Mg)



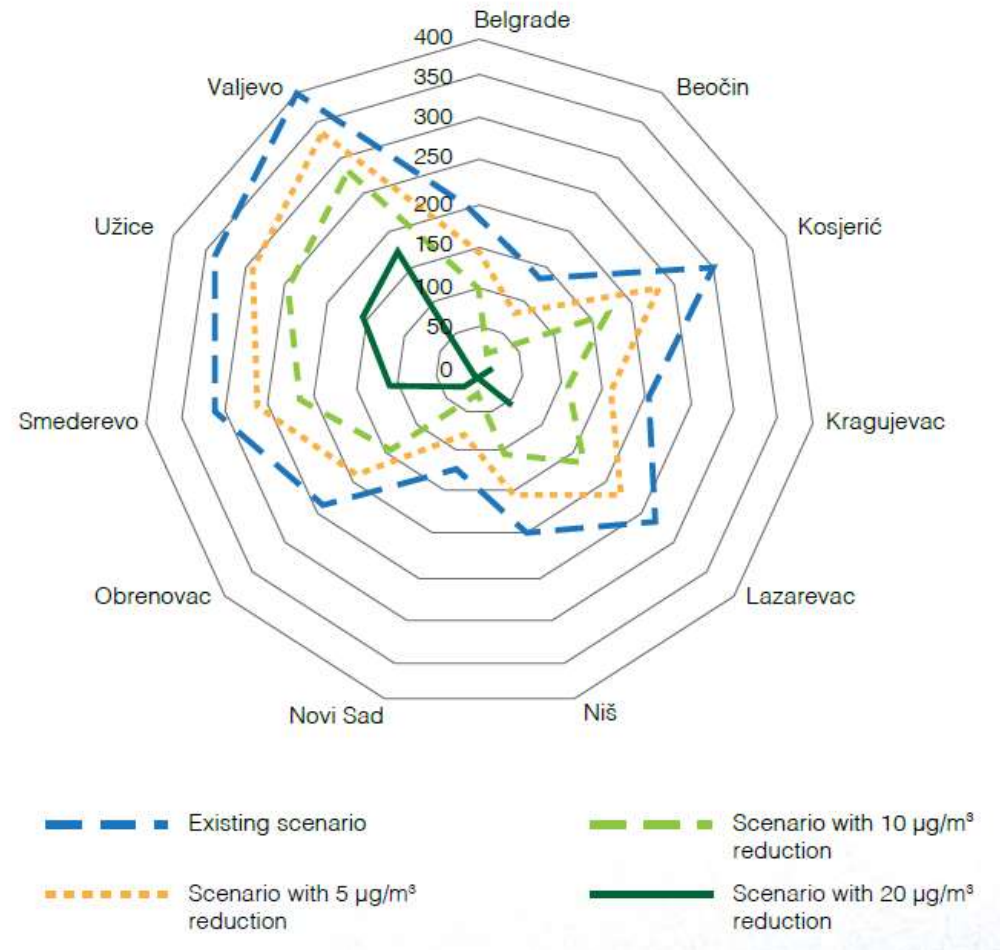
Total emissions of **PM_{2,5}** and three major categories of **PM₁₀** sources (Mg)

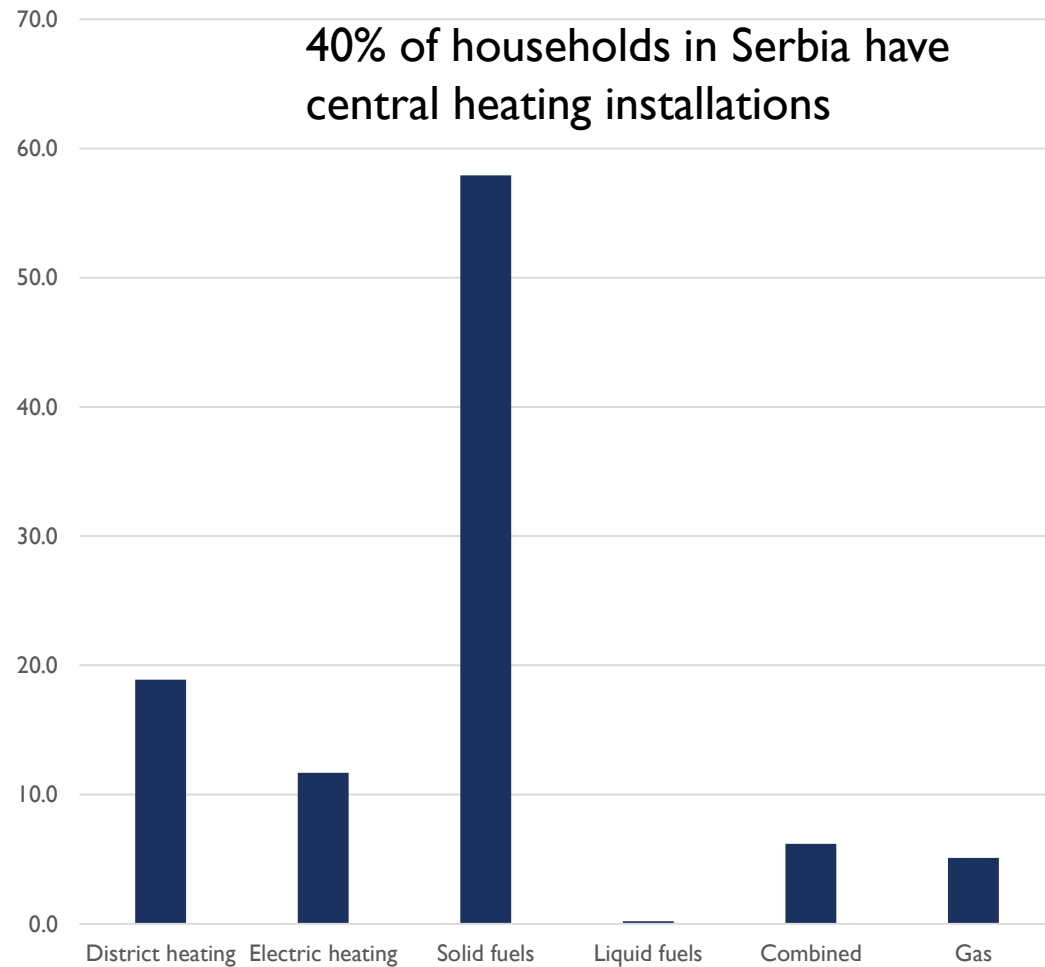


PRIMARY PM
PARTICULARLY
MATTERS

KILLING IS ITS BUSINESS...AND BUSINESS IS GOOD

- Serbia ranks second among 41 listed jurisdictions for YLL per 100 000 inhabitants in the EEA report





TYPE OF HEATING IN
DWELLING: SOLID
MY BROTHER, AS A
ROCK.

Stoves.
Efficiency.
Emissions.
People?

48% ready to
replace with
the support

Efficiency in
real life 32.59%

Results from two Serbian
regions.

57% of
households do
not have funds
to replace the
device

Emissions in
laboratory two
to four times
higher than
allowed

EFFICIENT STOVES - PROMOTING GOOD ENERGY!

- 55% of all households owned solid fuel stove , 86.4% rural households. (source: Statistical Office, survey discontinued)
- Supplemental heating in those households causes system wide peaks in electricity networks and poor utilization of assets.
- Significant amount of public money spent for cash support to vulnerable energy customers but:
- Income based subsidy scheme for vulnerable energy customers is not taking into account energy efficiency, or health perspective.



DECADES OF SILENCE AND
THEN BOOM:
AIR QUALITY TOPIC STARTED
TO BECOME BURNING
POLICY ISSUE 2018/2019 AND
EXPLODED THIS WINTER

POLICY? THE INVISIBLE MILLION

- Government established ad hoc working group for the air quality in January 2020
- Similar working group established by the line ministry year before is pushed into oblivion
- Set of ad hoc measures announced: electric vehicles, district heating, NERP, gasification



CHALLENGES AHEAD

Interactions with million households needed

ECO Design directive: accelerated adoption? Domestic production modernization challenge?

Design and implementation of robust changeout scheme. Who will lead? How to finance? How to make it attractive enough yet feasible to implement? Where to start? Pilot cities/regions? Role of domestic production?

Synergy with decarbonization

Role of district heat? Sustainability of current district heating mix?

Synergies and trade offs with building efficiency?

Role of natural gas?

Role of heat pumps?

VALUE ADDING INGREDIENTS: WELCOMING THE NEW GOVERNMENT. WANT TO JOIN?

- National survey on heating and energy poverty clusterization of households using heating modes, social and health status and building typology
- Inventory of existing public schemes for support to energy poor and its assessment from the air quality perspective
- Large regional air quality conference: December 2020 in Belgrade. Learning event to trigger robust policy making and implementation

Replace the stove.
It is difficult to beat.

- 53% of cost savings.
- Annual savings larger than the support for payment of bills provided by the state.
- Huge multiplication effect across the domains.



Replace the stove. It is
difficult to beat.