CAPE
Canadian Association of Physicians for the Environment
Association Canadienne des Médecins pour l'Environnement
ACME

To: **Task Force on Just Transition for Canadian Coal Power Workers and Communities**

From: **Dr. Courtney Howard, President, CAPE**
Kim Perrotta, Executive Director, CAPE
Date: **July 31, 2018**
Re: **Just Transition for Workers and Communities Displaced by Climate Action**

This statement is being made on behalf of CAPE, which is a Canadian non-profit organization that is dedicated to education and advocacy on environmental issues that have an impact on the health of people. Founded 25 years ago, funded primarily by individual donor-members, and directed by a Board composed of 10 physicians and one lawyer, CAPE's mission is to improve the health of people by protecting the planet.

For several years, CAPE's staff and volunteer doctor-members have worked hard to accelerate the closure of coal-fired power plants – first in Ontario, then in Alberta, then across Canada, and now on a global basis. We have targeted coal plants for several reasons.

First of all, we have targeted coal plants because they are one of the most significant sources of greenhouse gases (GHGs) that contribute to climate change. On a global scale, coal plants are responsible for 44% of the energy-related GHGs and 29% of the GHGs from all anthropogenic sources (IEA, 2015). The International Energy Agency (**IEA**) has identified the phase out of coal plants as one of the five climate policies essential to international success on climate change (IEA, 2015). If Canada is to effectively advocate for the closure of coal plants around the world, it must demonstrate that it is willing and able to do so at home.

Before 2005, coal plants in Canada were responsible for about 15% of Canada's GHGs. This percentage dropped to 8.4% in 2014 after Ontario completed phasing out its six coal plants. Coal plants continue to be among the top GHG emitters in Alberta, New Brunswick, Nova Scotia, and Saskatchewan (NIR, 2014).

Secondly, by closing coal plants, we can produce significant and immediate health benefits for the people living in the jurisdictions that take action. On a global scale, outdoor air pollution is

responsible for approximately 3.7 million premature deaths per year from heart disease, strokes, chronic obstructive pulmonary disease, lung cancer and acute lower respiratory infections among children (WHO, 2014b). The emissions from coal-fired power plants are responsible for a significant share of these deaths and many other chronic and acute health impacts.

An accelerated coal phase-out in Canada could produce air pollution-related health benefits valued at $4.9 billion. In 2017, there were 36 coal-fired electricity generating units operating at 16 coal plants in four provinces. In 2015, nine of these plants were among the top 13 sources of sulphur dioxide (**SO_2**) emissions in Canada, while 10 were among the top 13 sources of nitrogen oxides (**NO_x**) (ECCC, 2014a). SO_2 and NO_x, which are harmful pollutants themselves, can also be transformed into fine particulate matter (**$PM_{2.5}$**) and ground-level ozone in the atmosphere. $PM_{2.5}$ is the air pollutant that has been most clearly linked to chronic heart and lung diseases, while ozone is the air pollutant that most frequently triggers smog advisories in Canada.

These air pollutants have been clearly and consistently linked to chronic heart and lung diseases including lung cancer and asthma, and acute heart and lung ailments that result in premature deaths, hospital admissions, and emergency room visits. The very young, the elderly, and those with pre-existing health conditions, such as asthma, are the ones most at risk. More recently, these air pollutants have been associated with adverse birth outcomes, the development of cognitive disorders, and increased rates of diabetes (WHO, 2013).

Thirdly, a Canada-wide coal plant phase-out would also help protect the mental capacity of our children from the harmful effects of mercury. Coal-fired power plants are a major source of mercury; a persistent toxic substance that accumulates in the aquatic food chain (CCME, 2005). Prenatal and early-life exposure to mercury, resulting from the consumption of mercury-contaminated fish, has been linked to adverse developmental impacts such as reductions in cognitive abilities and motor skills (CCME, 2005).

Researchers have attributed 3.2% of intellectual disability cases in the United States to mercury exposure and valued these excess cases at $2.0 billion per year (Trasande, 2006). Women of childbearing age, pregnant women, children, and populations that depend on fish as a traditional food source, are at greatest risk from mercury (CCME, 2005). Long-range transport of environmental contaminants means that elevated exposures to mercury is a particular concern for Arctic peoples as well (Van Oostdam et al., 2005).

In 2014, nearly 2,400 kilograms of mercury were emitted into the air from 269 sources across Canada (ECCC, 2014b). Coal-fired power plants were the single largest source of those mercury emissions:

- They were responsible for nearly 35% of mercury emissions into the air nationally;
- Two plants in Saskatchewan were the two highest emitting sources in the country; responsible for approximately 16% of all mercury released into air across Canada;
- The three plants in Saskatchewan were responsible for 80% of that province's emissions;
- The four plants in Nova Scotia were responsible for 83% of that province's emissions;
- The coal plant in New Brunswick was responsible for 95% of that province's emissions; and

- The six plants in Alberta were responsible for 66% of that province's emissions and nearly 10% of Canada's mercury emissions to air (ECCC, 2014b).

Health Canada and Environment Canada estimated that mercury emissions avoided between 2015 and 2035 by the 2012 coal regulations would produce health benefits valued at $26 million in Canada. The Risk Impact Assessment Study notes however that these costs were limited to the developmental impacts associated with mercury and did not reflect new evidence which suggests that mercury may also be connected to heart disease and premature deaths. Pembina estimates that a more comprehensive assessment of mercury's impacts on health would place health benefits for the 2012 regulations in the range of $1.3 billion (Pembina, 2016).

So, as an organization of health professionals, we strongly support the accelerated phase-out of coal plants across the country. **However, as health professionals we also understand that unemployment and poverty can have a powerful impact on the health of individuals.** Within the field of public health, unemployment and poverty are well recognized as "social determinants of health" that can have a significant impact on the mental and physical health of people (Mikkonen J and D Raphael, 2010). For this reason, it is essential that an accelerated coal phase-out is paired with a just transition plan that mitigates the negative impacts on the affected workers and communities.

The 2017 Lancet Countdown on Climate Change and Health confirmed that "the human symptoms of climate change are unequivocal and potentially irreversible—affecting the health of populations around the world today." It calls for urgent mitigation measures to protect health, and points out that the low-carbon transition is already underway, including in employment, finding that "in 2016, global employment in renewable energy reached 9·8 million people, with employment in fossil fuel extraction trending downwards to 8·6 million people." This transition has health benefits for workers: in 2008, coal mining accidents led to more than 1000 deaths in China, with exposure to pollution responsible for high rates of cardiovascular, respiratory, and kidney disease in coal mining areas (Watts et al 2017).

Planning is required to ensure that the low-carbon transition's many benefits for health: improvements in local air pollution, decreased heavy metal contamination, reduced contributions to the greenhouse-gases that put global health at risk, and potentially healthier employment conditions for workers are not offset by abrupt decreases in the social determinants of health. Long-term planning is required, as are retraining and relocation programs for workers displaced from the coal sector, combined with extended severance packages and pensions for older workers.

In order to stay within our carbon budget we know that we face stranded fossil fuel resources—but there is much we can do to minimize stranded Canadian human resources. We thank the Just Transition Task Force for its efforts in support of workers and communities, and are happy to have further conversations with your group at any time.

Sincerely,

Dr. Courtney Howard, President, CAPE
Kim Perrotta, Executive Director, CAPE

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