

2 **Supplementary Information for**

3 **Unintended consequences of anti-flaring policies—and measures for mitigation**

4 **Raphael Calel and Paasha Mahdavi**

5 **Corresponding Author: Raphael Calel.**

6 **E-mail: raphael.calel@georgetown.edu**

7 **This PDF file includes:**

8 Figs. S1 to S3

9 SI References

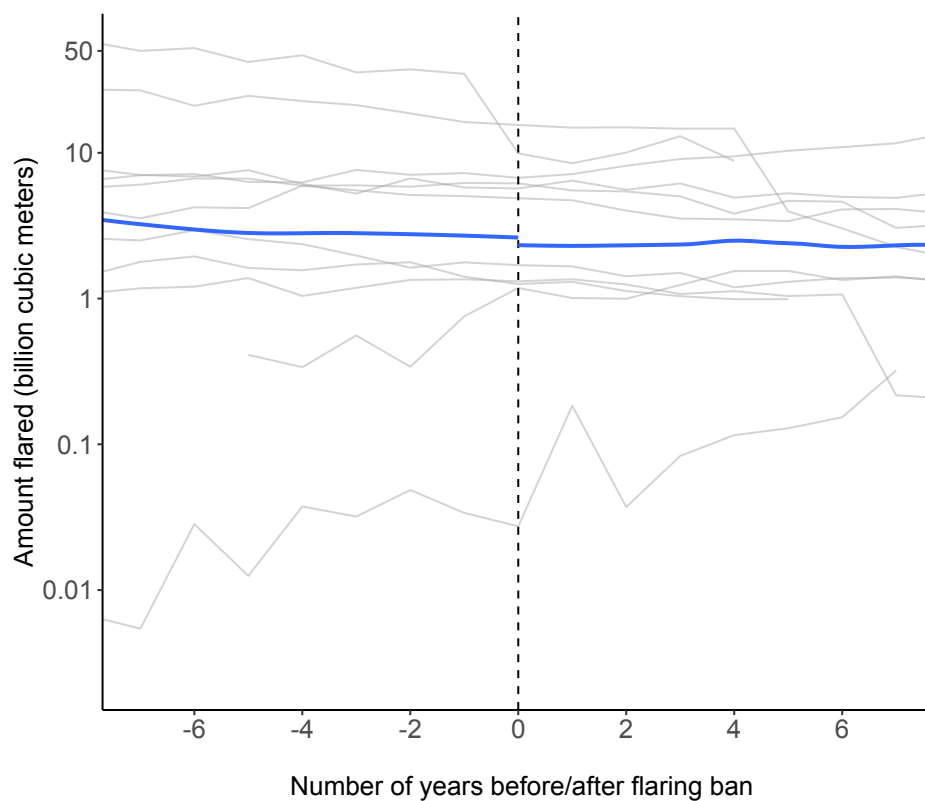


Fig. S1. Ineffectiveness of regulations to ban flaring. Quantity of flared gas for countries that have imposed a ban on flaring (logarithmic scale). The time-series are centered on the ban-year for each country and show flaring activity seven years before and after the ban. Flaring quantities from DMSP are re-scaled to form a continuous time-series with VIIRS. The fitted blue curve shows no sign of a structural break or meaningful downward trend.

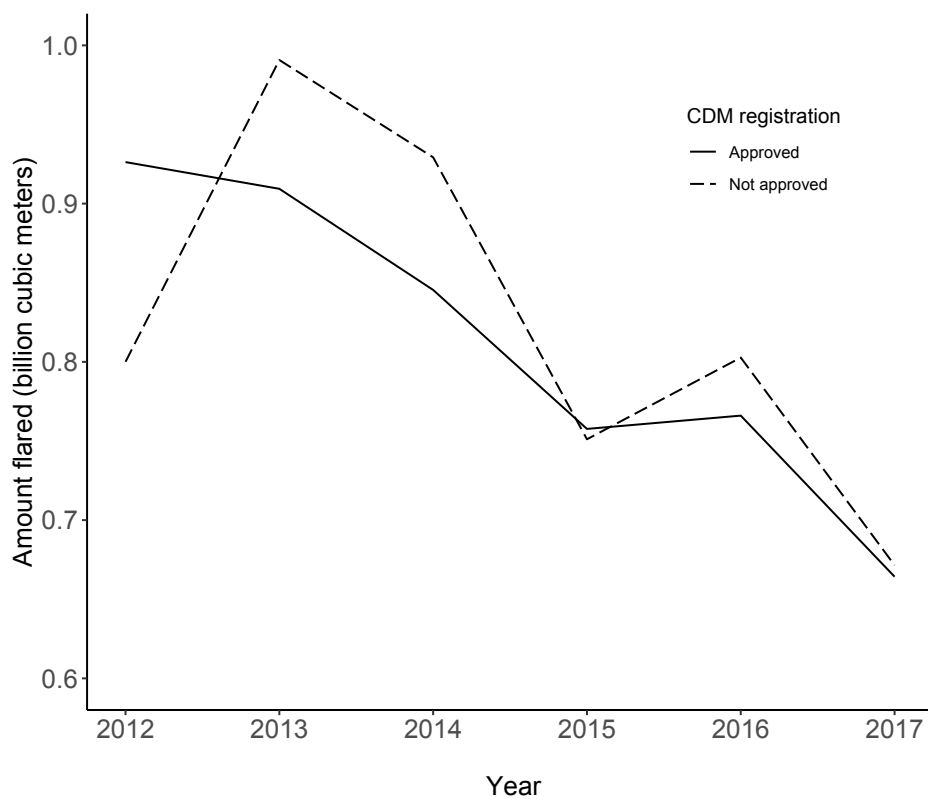


Fig. S2. Ineffectiveness of the Clean Development Mechanism to reduce flaring. Quantity of flared gas within a 1 km radius of 126 flaring locations listed in applications for carbon credits through the Clean Development Mechanism, separated into approved and rejected applications. Flaring at approved sites has declined no faster than at rejected sites, even though the producers receive carbon credits for every avoided tonne of emissions.

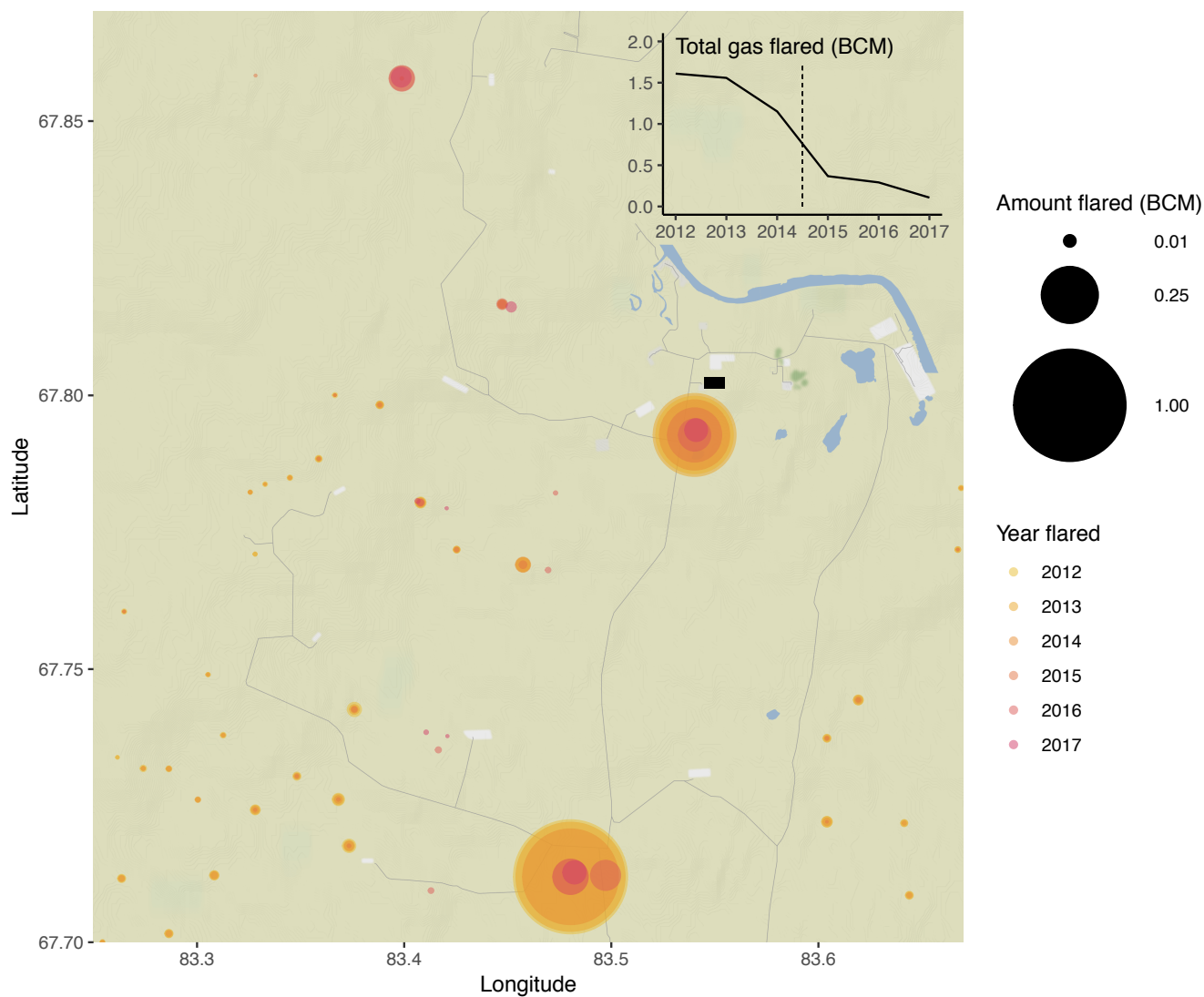


Fig. S3. Site-level flaring trends and the development of natural gas infrastructure at the Vankor oil field in Russia. Circle sizes and colors show variation in site-level flaring amounts over time, using VIIRS data. The plot in the top right shows changes in flaring amount for all sites within the map area. Flaring began to decline starting in 2012 when multiple compressor stations were added at the site indicated by the black rectangle. The steep decline in flaring followed the April 2015 connection to the national Gazprom pipeline, the timing of which is indicated by a vertical dashed line in the top-right plot (see also 1).

10 **References**

- 11 1. ORO Company, *Sustainability Report*. (Moscow: Open Joint-Stock Company Rosneft Oil Company), (Multiple years,
12 2011-2017).