

S1. Osservazioni sugli obiettivi generali dell'intervento

The Environmental Defense Fund (EDF) welcomes the environmental objectives contained in Article 1 of the Authority's Founding Law 481/1995, in particular the requirement on the service to deliver on social objectives, environmental protection and efficient use of resources in addition to its economic and financial objectives. EDF also appreciates that, in the fifth regulatory period, equal attention is given to environmental protection as to the other four elements provided by this document: safety, internal market, energy efficiency, research and innovation.

As regards this document's general objectives, EDF considers that **the issue of methane leaks in gas networks should feature more prominently**. According to the IEA global oil & gas-related methane emissions in 2017 were estimated to be 80 Mt. **Methane is a greenhouse gas 84-87 times more potent than CO2 over the first 20 years after it has been emitted**. While there is lack of accurate data about methane emissions from oil & gas, enough is known to conclude **these emissions challenge the climate benefits of gas**. In 2018 EDF published a series of sixteen peer-reviewed studies which found that methane emissions from the U.S. gas supply chain were 60% higher than reported in the EPA inventory:
<https://www.edf.org/climate/methane-studies>.

This is not only limited to natural gas but is **also a challenge for "renewable gases"** – methane is methane, after all, the climate impact of leaks will be as damaging. It is therefore urgent to give the issue the prominence it merits, especially with regards to measurements and management of methane emissions.

It is critical for ARERA to require activities for detecting and repairing the emission volumes involved – this is a different operation to monitoring for safety reasons. Thresholds for safety are about individual leaks. Thresholds for environment are about total emissions (leaks and intentional/known emission sources). In conclusion, a single quantitative threshold may not target both. Eventually, companies should understand/monitor all their emissions (leaks + intentional/known sources). This is fundamentally different from HSE, which looks only at leaks by definition.

S20. Osservazioni sulle ipotesi regolatorie a sostegno dell'innovazione e della tutela ambientale?

EDF commends ARERA for its attention to what is possibly the biggest challenge to the gas industry: methane emissions. Considering that the technologies - such as LDAR for methane emissions leakage, detection and repair - exist and are cost-effective, the experimentation approach through pilot projects seems exceedingly cautious.

It is advisable for ARERA to take inspiration from the 2016 California SB 839, which requires CARB, the California Air Resources Board, to develop a model of fugitive and vented emissions of methane, from natural gas infrastructure.

The model shall do all of the following: quantify emissions from specific natural gas infrastructure. In this model "natural gas infrastructure" means natural gas facility used for the production, gathering and boosting, processing, transmission, storage or distribution, all necessary for the delivery of natural gas to end-use consumers in California, and they include infrastructure located in and outside California.

It would be useful for ARERA to also consider SB 1371, a bill passed in California in 2014, which requires the California Public Utilities Commission to open a proceeding in order to evaluate best practices for utilities in order to better identify, measure, avoid, and repair leaks. This proceeding, with an eye towards supporting a goal of reducing methane emissions, and implements the following: annual reporting for tracking methane emissions, 26 mandatory best practices for minimising methane emissions (including policies and procedures, recordkeeping, training, leak detection, leak repair, and leak prevention), a biennial compliance plan incorporated into annual utility gas safety plans, and the passage of a cost recovery process to facilitate Commission review and approval of incremental expenditures to implement best practices and pilot programs and research & development.

Given that ARERA's measures are mandatory for natural gas distribution (and transport) companies, it would be possible for ARERA to charge these companies with the task of monitoring and detecting leaks according to LDAR methodologies for two years, and communicate the results.

At the end of this period, ARERA will be able to examine the situation and define a path for reducing leaks, according, for example, to yearly measures based on a premium-penalty scheme, which we understand was successfully adopted for monitoring power networks and interruptions in the electricity service.

EDF therefore considers that the climate-changing impact of methane leaks is as serious and manageable as safety risks and ought to be acknowledged as such.