# HYDROGEN PRODUCTION, HYDROGEN CO-FIRING

## What Is Hydrogen Fuel?

Hydrogen fuel has been marketed as an alternative to fossil fuel and a solution to the climate crisis. However, at every point in its life cycle, hydrogen fuel poses significant risk to EJ communities and communities where this infrastructure is built. Irregardless of how the hydrogen was produced, it still poses a danger to workers and communities when transported, stored, and co-fired.

## The Dangers

### Production

All colors of hydrogen, except for green, rely on non-renewable fuel to power their process which poses a risk to EJ communities. Green hydrogen, although produced via electrolysis powered by renewable energy, is still highly water intensive and not sustainable water usage.

### Transportation/Storage

All hydrogen types have risks with transport and storage. Transporting by pipelines risks embrittlement, leaks, and explosions. Transportation by super-cooled trucks could lead to explosions or fires. Transport and storage also carry risks of co-pollutant emissions.

### Co-Firing

When co-fired (i.e. when burned alongside natural gas to generate energy), hydrogen produces co-pollutants (hazardous pollutants that are released alongside greenhouse gases) and dangerous toxins such as PFAs and NOx, and can generate smog and particulate matter.

## Colors

**Gray Hydrogen**
Hydrogen produced from fossil fuels

**Blue Hydrogen**
Hydrogen produced from fossil fuels, employs CCS to "capture" emissions

**Pink Hydrogen**
Hydrogen produced from nuclear energy

**Green Hydrogen**
Hydrogen produced via electrolysis using renewable technologies

## The Bottom Line

The color code for hydrogen merely refers to the way in which it was created. It masks the dangers associated with the rest of its lifecycle (ie. production, transportation, storage, and end-use/co-firing). There may be some limited uses for green hydrogen in hard-to-decarbonize sectors, but this should be examined with caution and determined on a case by case basis, only if other renewable alternatives are not feasible.