



EPP and Center for Climate and Energy Decision Making
**Sponsored
Seminar**

Adam Brandt

Assistant Professor

Department of Energy Resources Engineering

Stanford University

Presenting on:

“Methane emissions for North American natural gas systems: The state of the science”

March 31, 2014

12 noon

(Lunch served at 11:50am)

Baker Hall 129 Conference Room

Department of Engineering and Public Policy

Seminar Abstract:

Natural gas has been proposed as a more climate-friendly replacement for coal and oil in near-term greenhouse gas mitigation strategies. In addition, its flexibility and efficiency as a fuel for dispatchable electric power means that natural gas will likely be useful for firming of grids with high renewable power fractions. Recent studies of leakage from natural gas systems have called into question these beneficial uses, as high leakage rates can result in significant near-term climate forcing from leaked methane. This presentation will report the results of a comprehensive review of scientific studies of natural gas leakage at all scales. Our group of experts reviewed over 200 studies, arriving at the following conclusions: (1) evidence at all scales suggests that leakage from natural gas systems is likely to be higher than official estimates; (2) recent studies that find very high leakage rates are unlikely to be representative of the gas system as a whole, due to bounds placed on overall methane balance from continental-scale atmospheric studies; (3) plausible leakage rates call into question benefits from fuel switching in the transport sector (particularly diesel fuel), while coal substitution is likely to still have significant benefits.