Title: Direct, Low-Temperature CO_2 Electrolysis to Methanol with Demonstrated Selectivity, Scalable Cell Architecture, and Superior Energy Efficiency

Abstract: Oxylus Energy's electrochemical platform provides a scalable pathway to cost-competitive, CO_2-derived methanol. Our technology directly converts captured CO_2 into green methanol (or CO, for interested offtakers), enabling a low-temperature, modular alternative to conventional reforming and hydrogen-intensive routes. Designed for seamless integration with downstream catalytic upgrading, the system supports flexible deployment across biogenic emitters, chemical facilities, and emerging e-fuel hubs. By advancing catalyst efficiency, design, and durability, combined with manufacturable stack engineering, Oxylus is reducing the cost and complexity of CO_2 conversion while expanding where and when e-methanol can be produced. Multi-kW stack development and upcoming pilot projects mark the transition from laboratory validation to commercial readiness, creating new opportunities for producers, offtakers, and project developers to secure reliable, low-carbon methanol of e-CO supply. Our mission is to make CO_2-to-methanol practical at scale, using electrochemistry to deliver affordable, carbon-neutral fuels and feedstocks.