جوائز أديبك
ADIPEC AWARDS
EXCELLENCE IN ENERGY 2018
BREAKTHROUGH TECHNOLOGICAL PROJECT OF THE YEAR

NET POWER

Truly Clean, Cheaper Energy

NETPOWER

THE SUPERCRITICAL CO_2 ALLAM CYCLE IS SIMPLE

HISTORICALLY, CO_2 CAPTURE HAS BEEN EXPENSIVE, WHETHER USING AIR COMBUSTION OR OXY-COMBUSTION

AIR COMBUSTION:

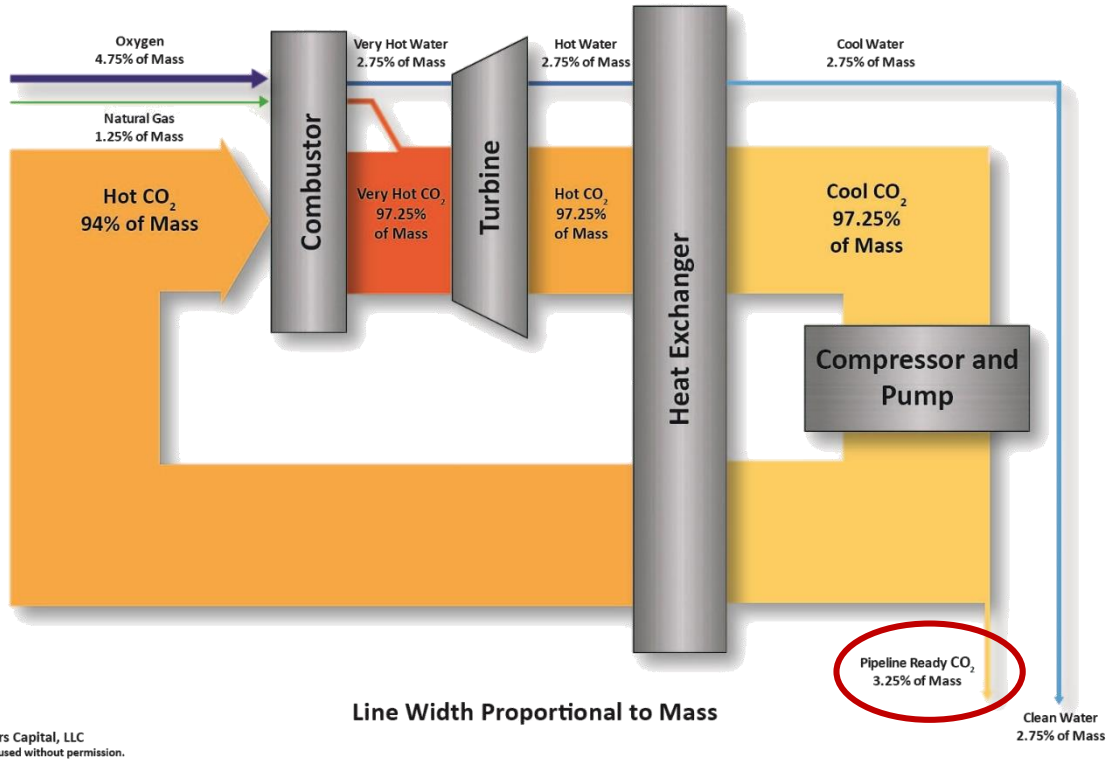
$$\underbrace{8N_2 + 2O_2}_{air} + CH_4 \rightarrow \underbrace{8N_2 + CO_2}_{expensive\ to\ separate} + 2H_2O$$

OXY-COMBUSTION:

$$\underbrace{2O_2}_{expensive\ to\ produce} + CH_4 \rightarrow CO_2 + 2H_2O$$

THE ALLAM CYCLE MAKES OXY-COMBUSTION ECONOMIC BY:

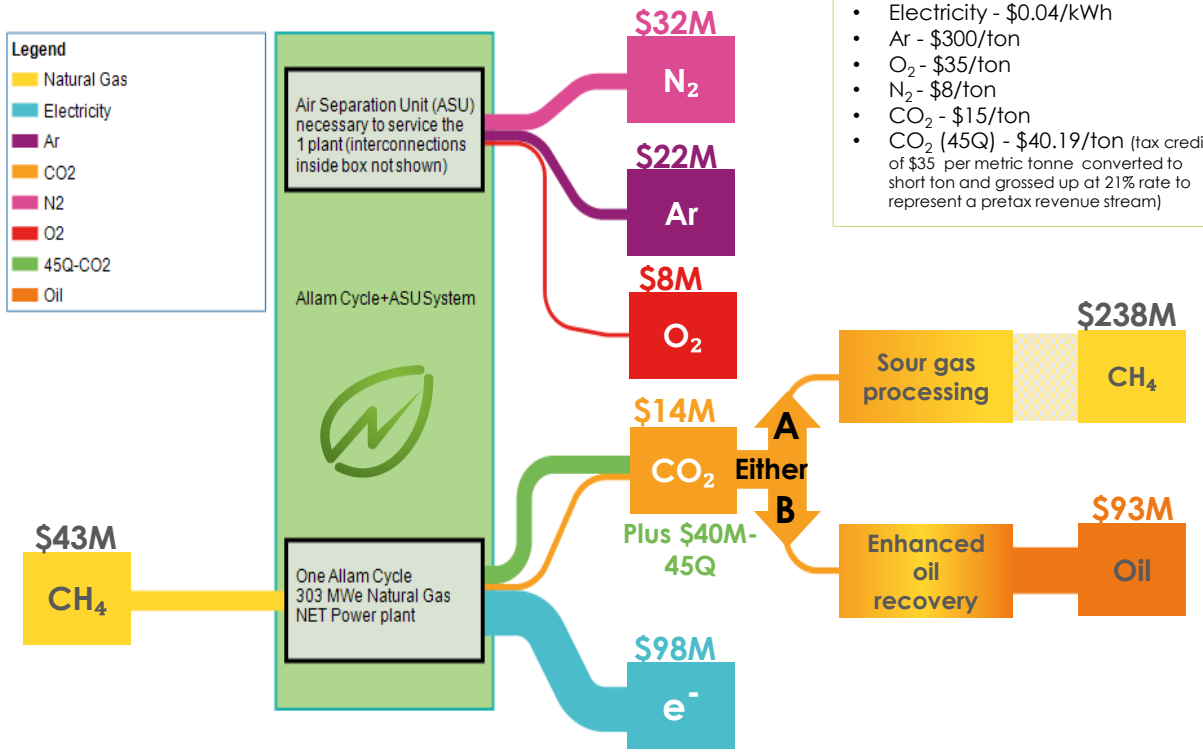
1. RELYING ON A MORE EFFICIENT CORE POWER CYCLE
2. RECYCLING HEAT WITHIN THE SYSTEM TO REDUCE O_2 AND CH_4 CONSUMPTION, AND ASSOCIATED COSTS OF THE AIR SEPARATION UNIT (ASU)



NET POWER IS ABOUT MORE THAN ELECTRICITY

VALUE OF INDUSTRIAL GAS STREAM APPROACHES VALUE OF ELECTRICITY

45Q NOW BEING PASSED INCREASES THE VALUE OF NET POWER'S CO_2 SIGNIFICANTLY



PATH TO COMMERCIAL

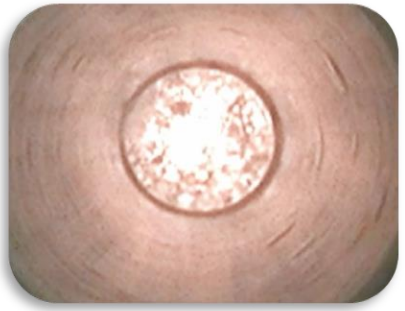
Commercial Scale-Up to 300 MWe

- **Core Cycle:** Proven and operational
- **Combustor:** No scale-up, full-scale testing successfully completed
- **Balance of Plant:** Components already commercially available at scale and proven
- **Turbine shell:** 2.5x scale-up, testing underway

Early 2020s Target COD for 300 MW plant

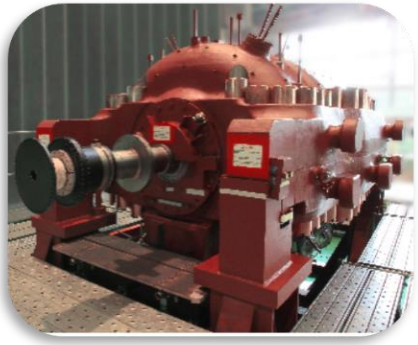
50MWth facility

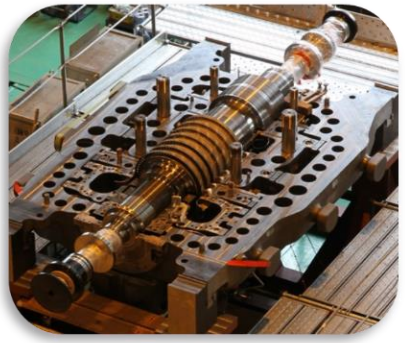
Combustor test facility



Flame in combustor

Turbine (external)





Turbine (internal)

Images of combustor and turbine provide courtesy of Toshiba Energy Systems & Solutions Corporation, not to shared or distributed.

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