
OKLO

# Background

Oklo is developing next generation fission reactors for domestic and global power markets

First nuclear company to win MIT and Boston startup competitions, first Y Combinator nuclear company, part of first hard tech YC batch

Pioneered private financing routes for fission companies, and raised private investment rounds in 2014, 2015, and 2018

# Milestone highlights

Oklo submitted the first ever combined license application to the Nuclear Regulatory Commission (NRC) to build and operate an advanced reactor in March 2020 which was accepted in June 2020

First operations anticipated before 2025

Oklo was the first advanced reactor company to begin pre-application interactions with the NRC in 2016

Oklo received a site use permit from the Department of Energy to site and build its first power plant in Idaho

Oklo was awarded recycled fuel to use in its first reactor in 2019

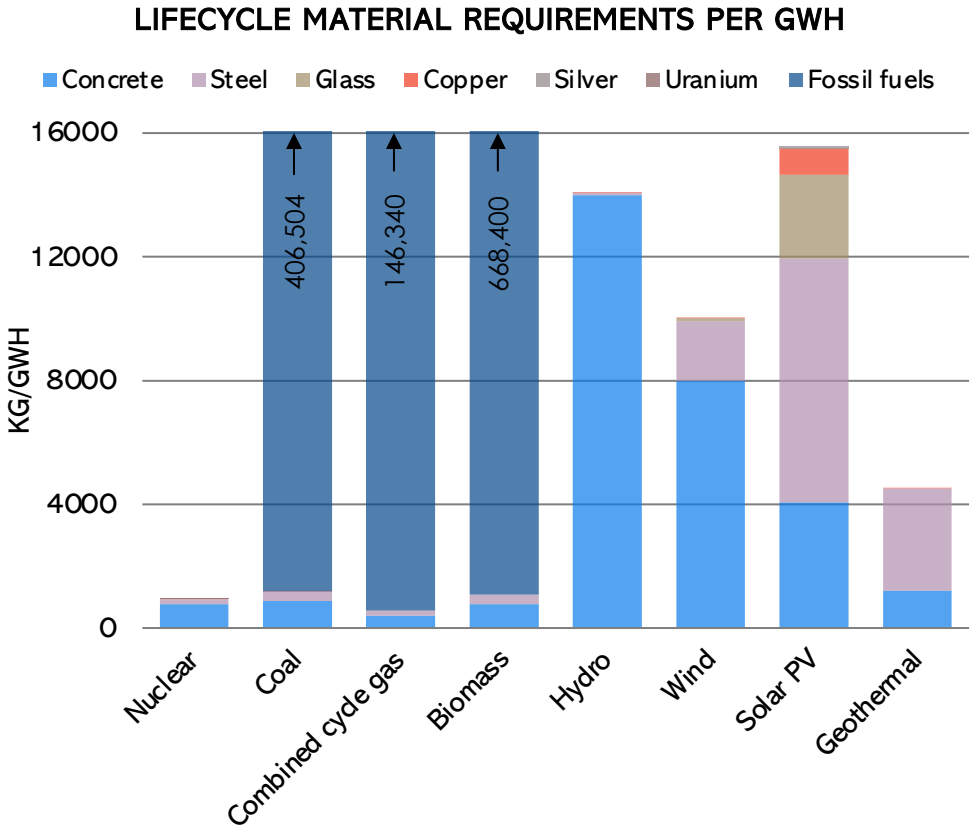
Other highlights include fabricating fuel prototypes as well as completing thermal testing campaigns

# Making reactors people want

Fission should be competitive with all alternatives thanks to the incredible energy density of its fuel

Simplified designs that capitalize on inherent physical characteristics reduce complexities and costs

Oklo's design and licensing approach helps change this paradigm

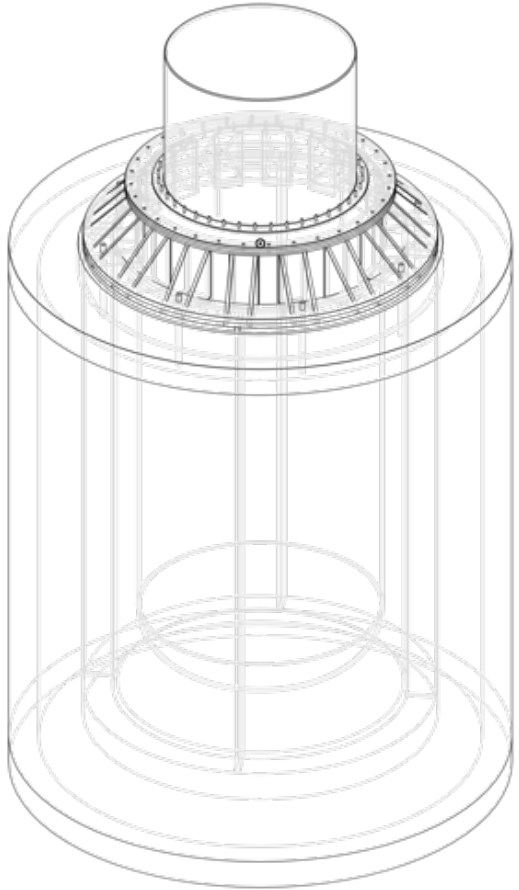



The Aurora Powerhouse

# The Oklo Aurora

The Aurora is Oklo's first reactor:

- 1-1.5 MWe output
- Metallic fuel
- Up to a 20-year fuel lifetime



# The Aurora

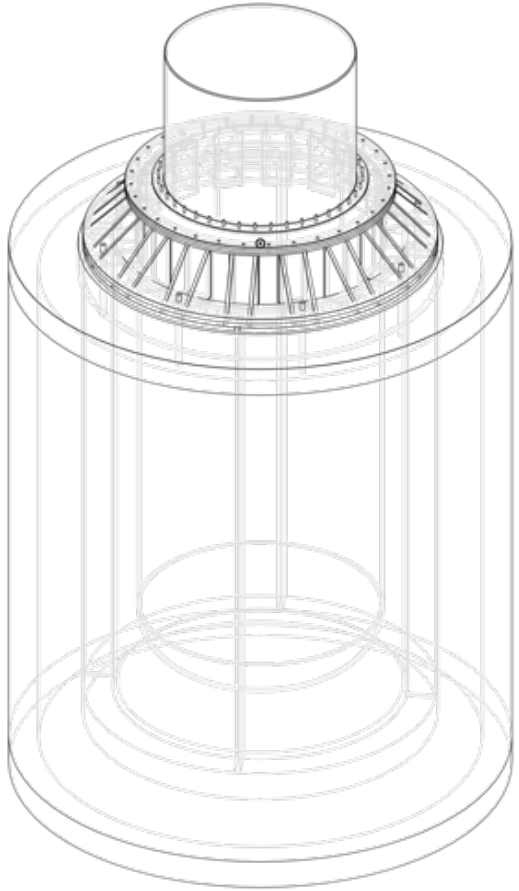
Heat is generated in metallic fuel and transported to the power conversion heat exchanger

Decay heat primarily removed via bypass cooling loop through the heat exchanger

Should that fail, decay heat is conducted radially to the outer edge of the module where it is transferred to the environment

Gravity-aided shutdown rods

Multiple independent pathways for passive heat transport from the core

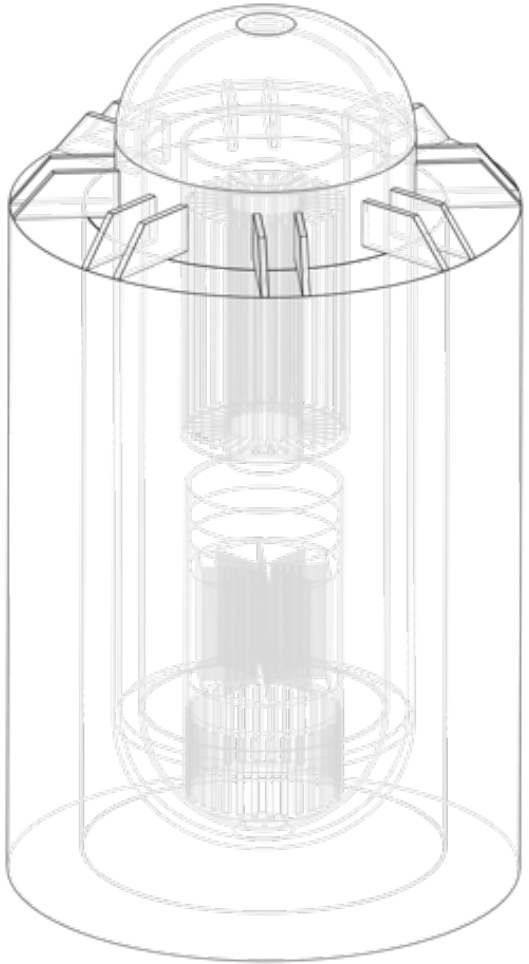


# What’s next

Scale to convectively-cooled reactors also using metallic fuel

Submitting additional COLAs

Licensing fuel fabrication capabilities



# Nuclear as a service

Oklo designs and operates its power plants, selling power via power purchase agreements

We capture the margins from power sales, while driving down operating and ownership costs through verticalization

We make it easier for customers to buy clean power

# Metallic fuel

Decades of operational data from the IFR program

Resistant to cracking or chipping

Relative ease to fabricate – key properties insensitive to manufacturing method

Readily recyclable

High thermal conductivity and low specific heat

- Lower peak fuel temperature and stored energy
- Easier to dissipate heat from the fuel

Oklo worked with INL to fabricate fuel prototypes in 2017

Oklo working with INL to deploy a pilot fuel fabrication line for its first cores before scaling to commercial fabrication capabilities at a separate facility

# Core information

U-10Zr fuel in SS-316L cladding

Enrichment ranges up to 19.75%

Oklo is working with HALEU recovered from previously irradiated EBR-II fuel using electrochemical separations in operation at INL

Reactor control achieved by rotating reflector drums and gravity-aided shutdown rods

Low power density and low discharge burnup – less than 20 MWd/kg (2 at%) on discharge for early units, later units will achieve >60 MWd/kg

> *Life extensions may be possible as well*

Fast reactors and metallic fuel partly chosen for reuse and recycling potential

# Fuel efficiency

Oklo is developing reactors that operate with fast neutrons

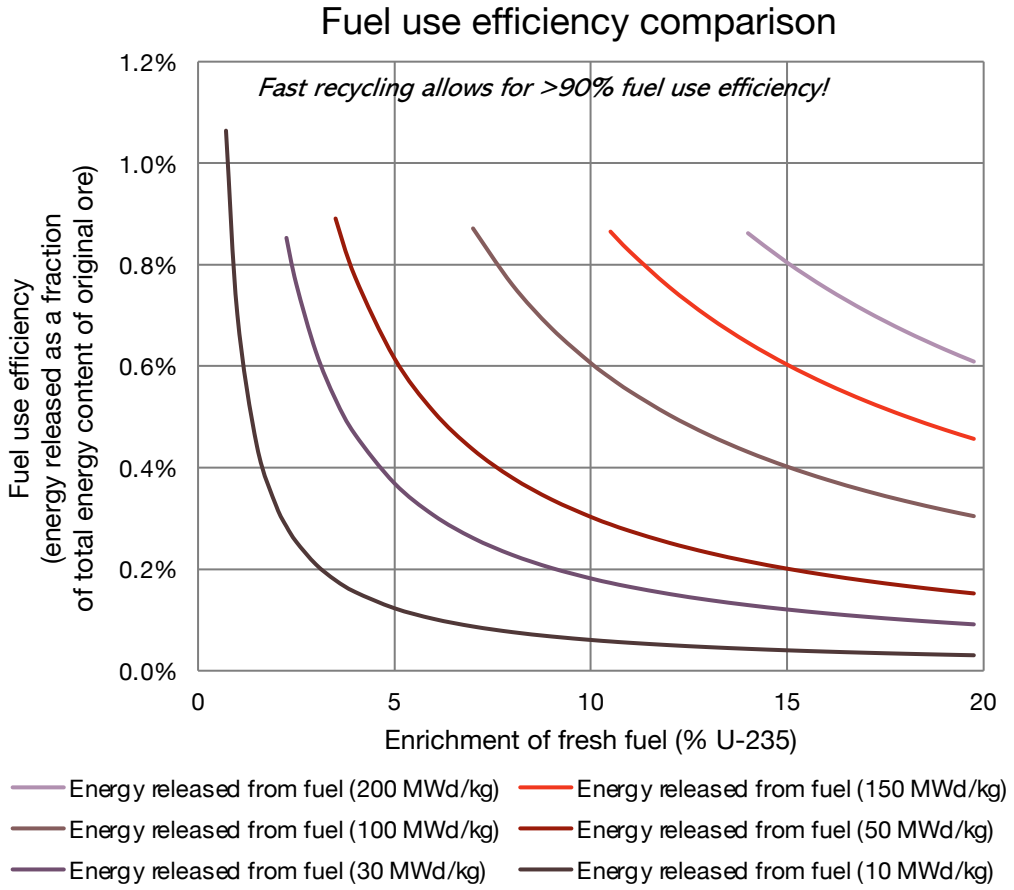
Fast neutrons enable us to extract far more energy from fuel than today's reactors

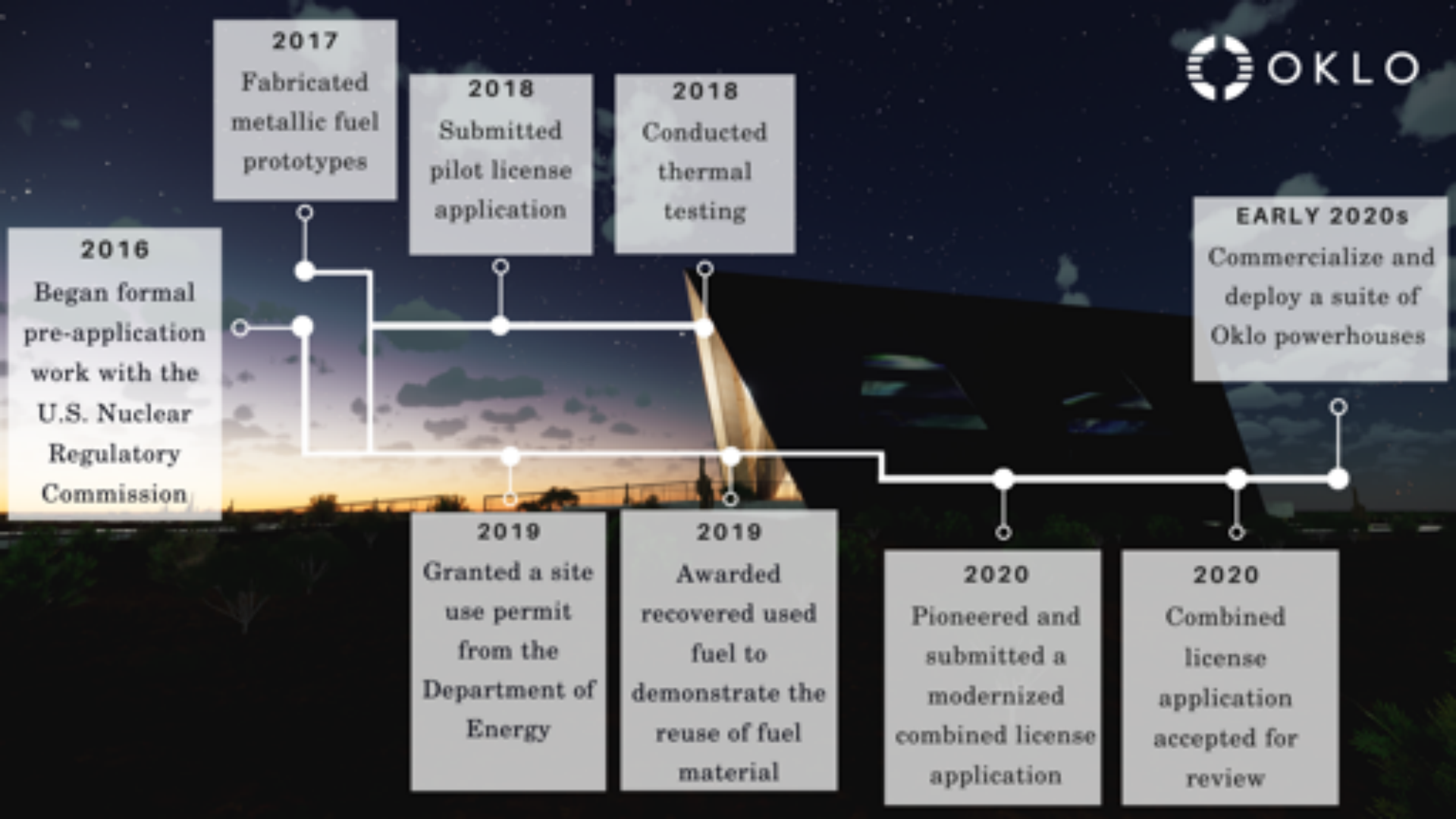
Fast neutrons can unlock more than 90% of the energy content in uranium ore, compared to less than 1% for today's reactors

This means a person's lifetime energy needs are met by a golf ball of uranium metal, and the waste would fit in a soda can

Fast neutrons also allow fast reactors to recycle their own used fuel, as well as the used fuel of other reactors

Oklo is using recovered fuel for its first reactor




OKLO
2016
Began formal pre-application work with the U.S. Nuclear Regulatory Commission
2017
Fabricated metallic fuel prototypes
2018
Submitted pilot license application
2018
Conducted thermal testing
2019
Granted a site use permit from the Department of Energy
2019
Awarded recovered used fuel to demonstrate the reuse of fuel material
2020
Pioneered and submitted a modernized combined license application
2020
Combined license application accepted for review
EARLY 2020s
Commercialize and deploy a suite of Oklo powerhouses


OKLO