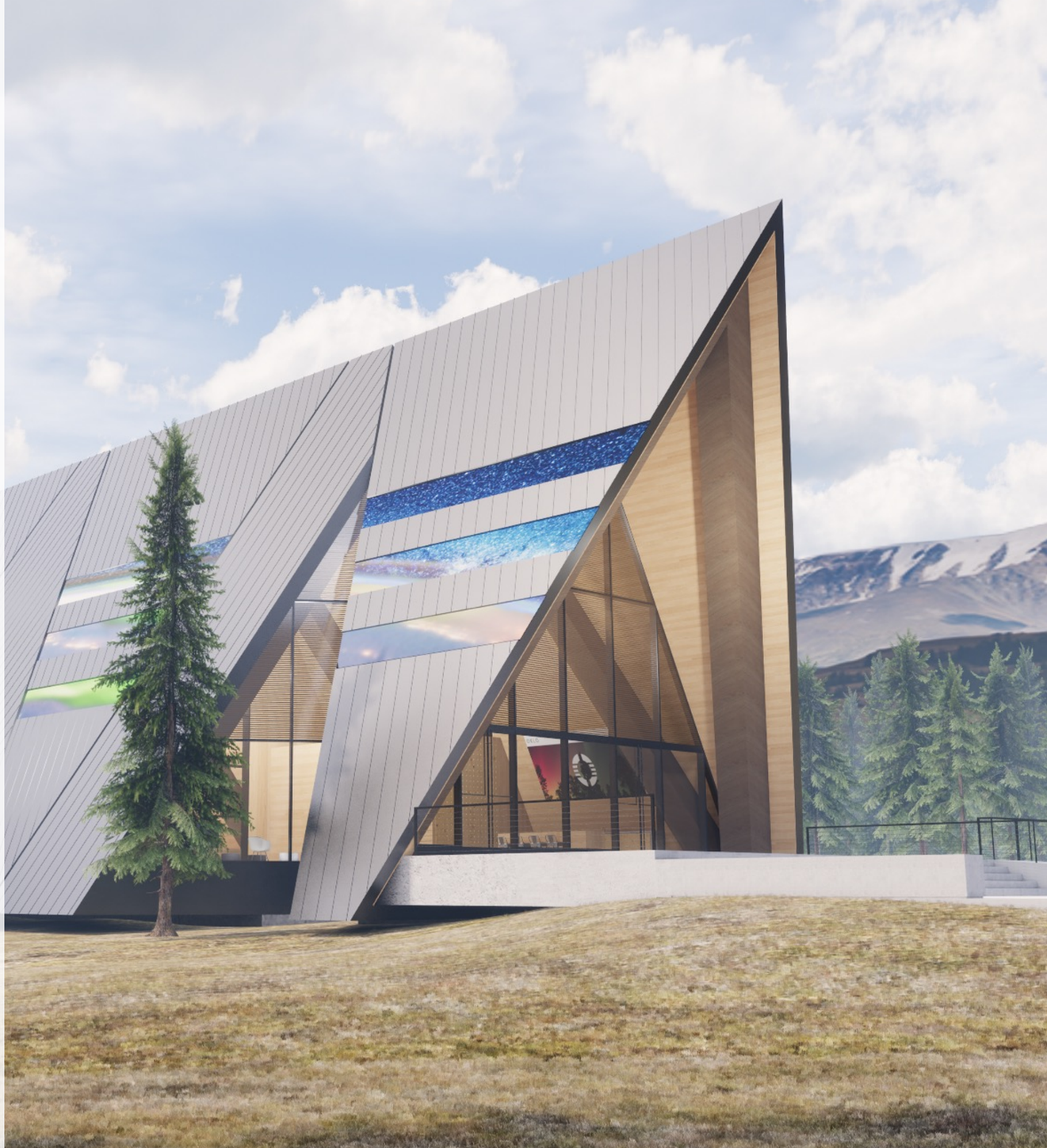
OKLO



ABOUT OKLO

Developing small advanced reactor systems

Inherently simple and robust

Flexible siting with minimal water resources required

The first combined license application of its kind accepted by the NRC

THE AURORA

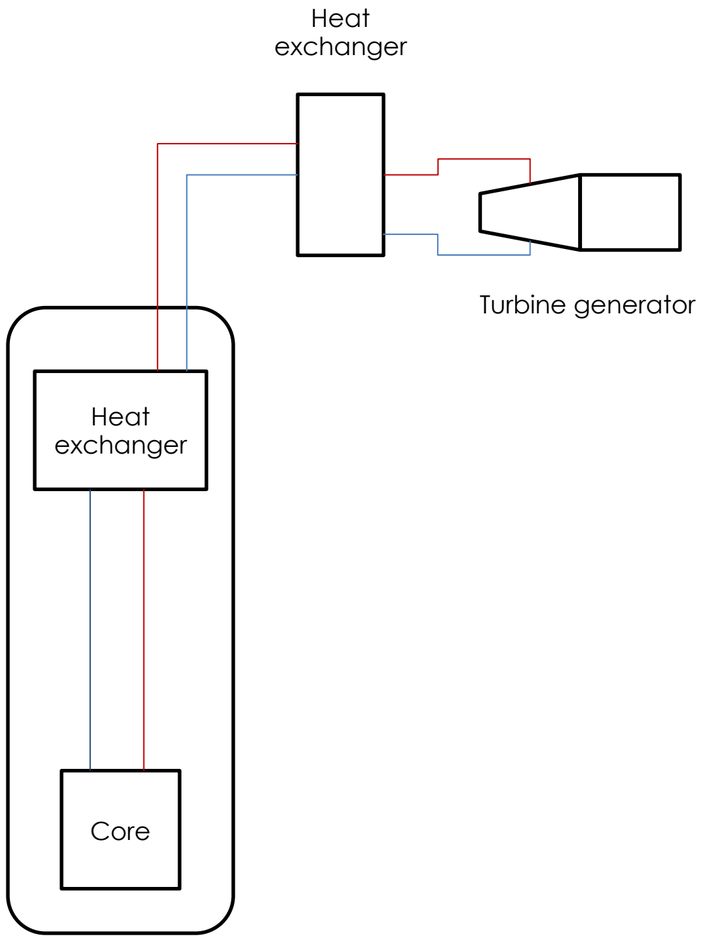
HOW IT WORKS

Heat is generated in metallic fuel

Heat is transferred by coolant to the power conversion system

After-heat removal accomplished by natural air flow around system

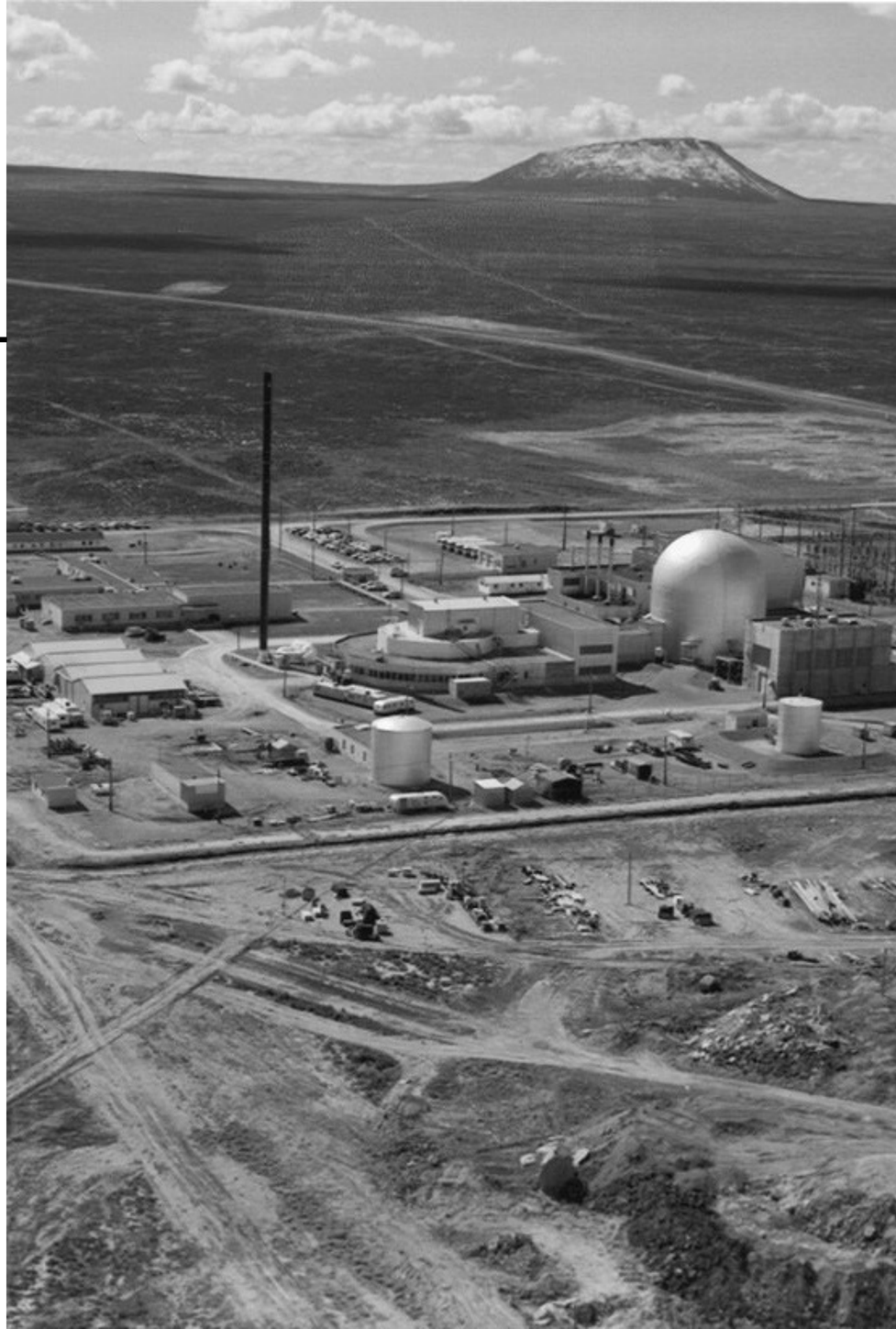
In short, we put specific metals together in specific configurations and make heat



IT'S BEEN PROVEN BEFORE

The Aurora builds on the Experimental Breeder Reactor II legacy

A sodium-cooled fast reactor operated from 1964-1994 demonstrating inherent safety characteristics and the ability to recycle fuel



FAST NEUTRONS

Fast neutrons enable us to unlock more energy from nuclear fuel

Fast neutrons also allow fast reactors to recycle their own used fuel and the used fuel of other reactors

SIMPLE DESIGN

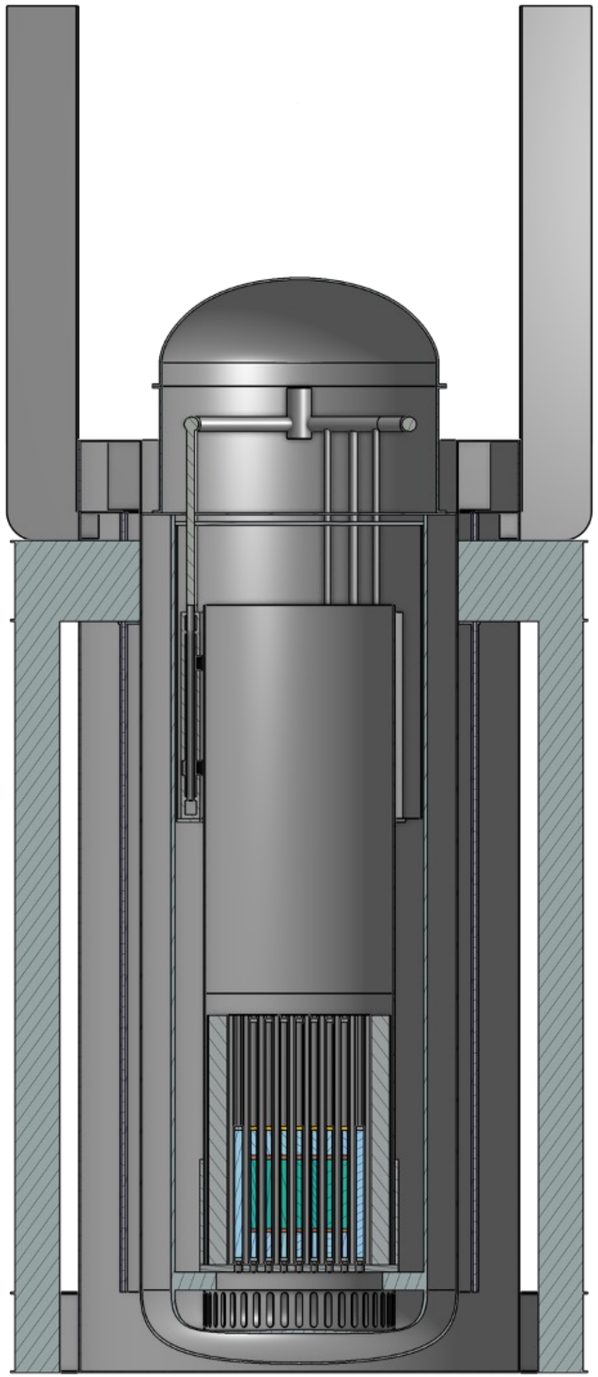
Small fast reactor

Metal fueled, liquid metal cooled

Inherently and intrinsically safe

Simple, modern, streamlined design

Recycles waste into clean energy



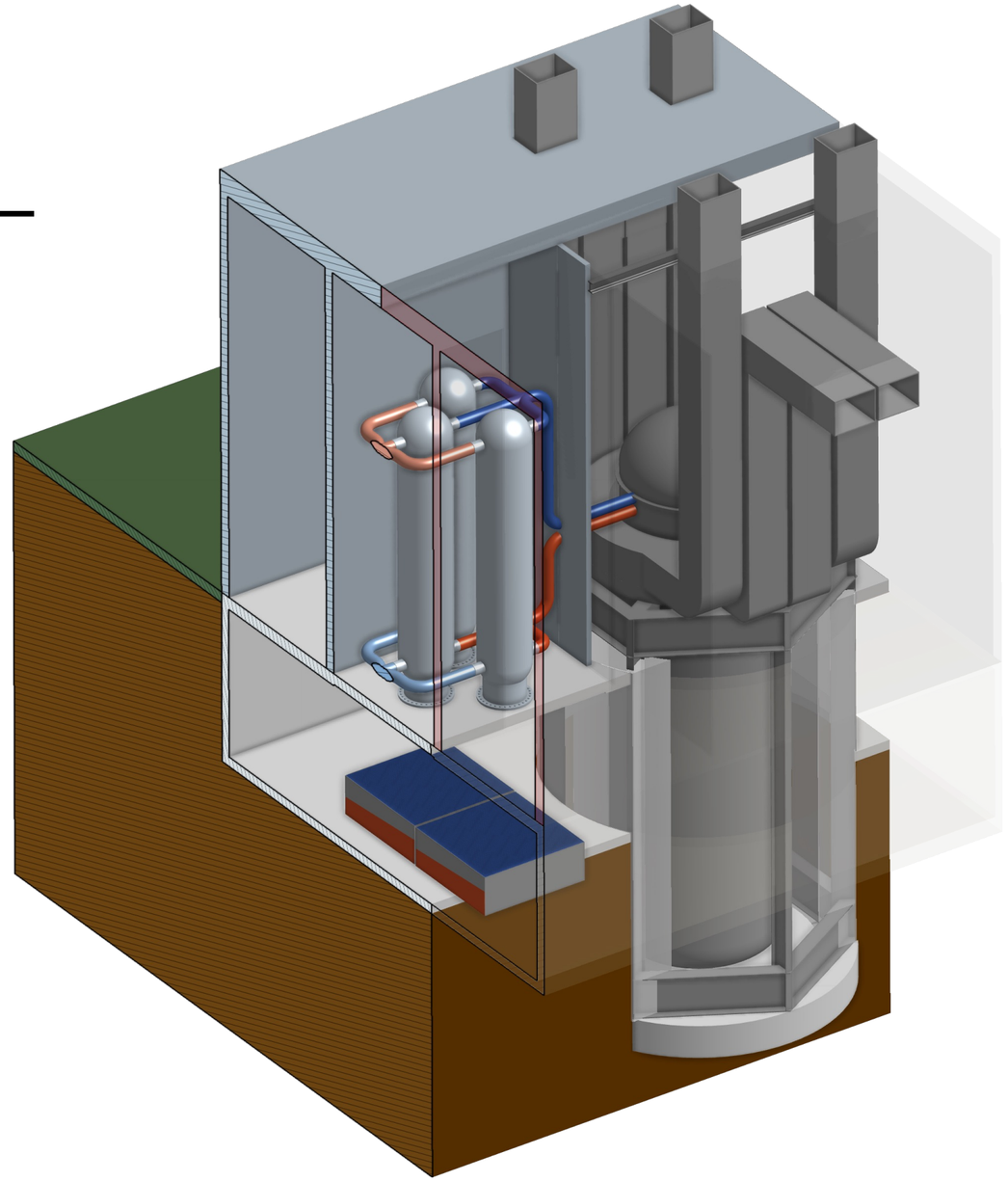
COST AND OPERATING BENEFITS

1000x fewer parts requiring regulatory oversight

Non-pressurized operations mean cheaper and simpler components

Offsite fabrication and manufacturing leads to fast installation and streamlined deployment

Flexible siting can be built close to where power is used



ELECTRICITY AND HEAT

Oklo reactors offer flexible electricity and heat generation options

Including cogeneration and industrial process heat

FLEXIBILITY

Sites on an acre or less

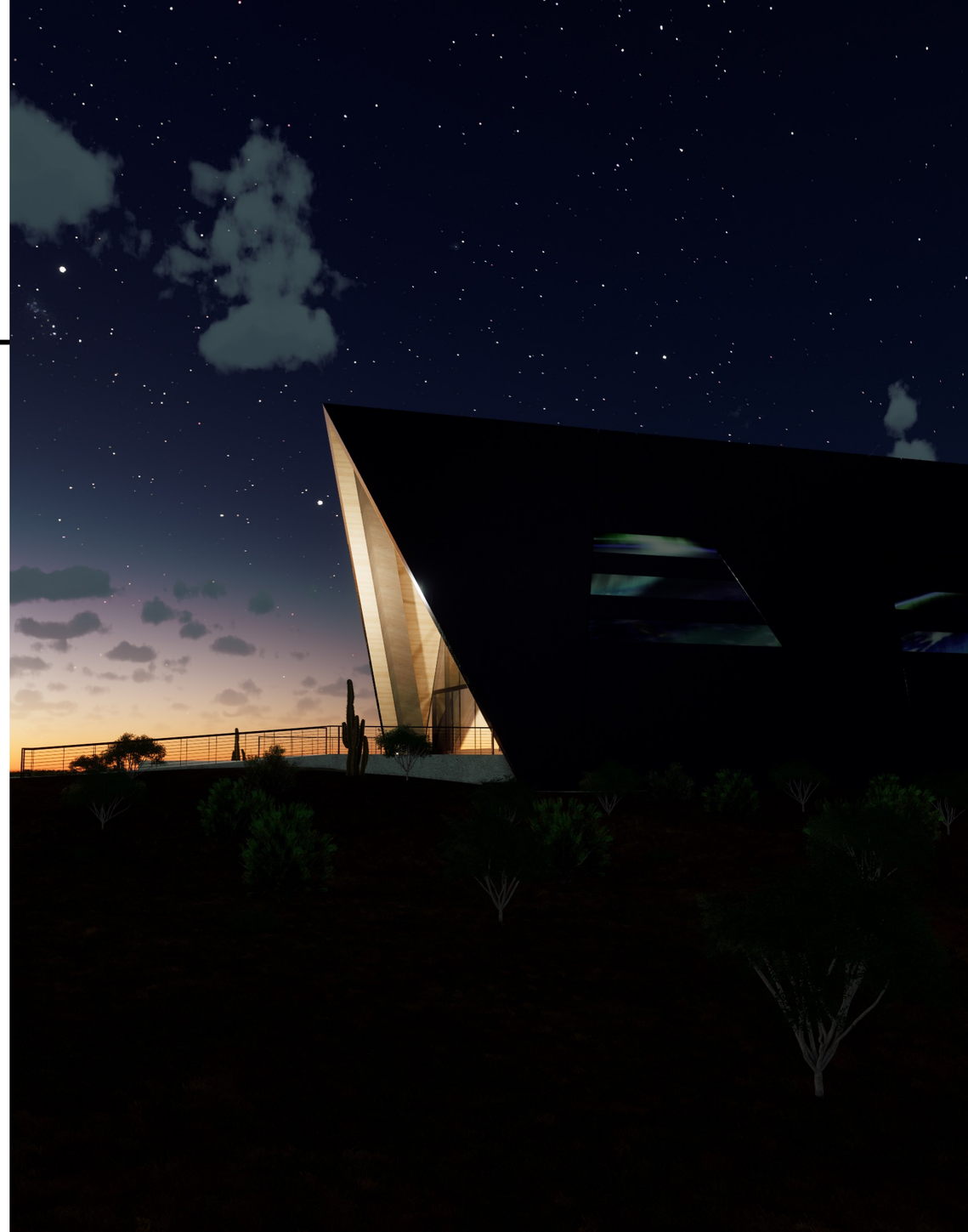
No water requirements

Flexible grid interfaces

High potential up time

Can operate behind the meter

Repeatable licensing and permitting



FISSION AS A SERVICE

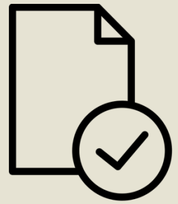
Oklo owns the development, licensing, capital costs and the operations of the powerhouses

The customer can simply sign a PPA and buy electricity or heat once the reactor is online

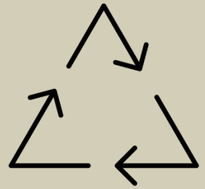
THE OKLO MODEL

Oklo owns and operates the Aurora

Oklo offers a PPA starting at a 10-year term



Competitive pricing and terms



Lifecycle management of plant and fuel

OKLO'S DEPLOYMENT TIMELINE

2023	2023-2024	2025	2026
Oklo expects to submit its updated license application for its Idaho plant	Oklo anticipates submitting additional applications for other sites	Oklo expects to receive approval to build and operate its first Aurora in Idaho	Construction completed and operation begins

Oklo Recycling at a Glance

Oklo is pursuing commercialization of a pilot-scale (and ultimately a commercial-scale) recycling facility

Technology based on engineering-scale demonstration accomplished over decades at Idaho National Laboratory and Argonne National Laboratory

Oklo has engaged the U.S. NRC and is working to license such a facility starting in 2025

Why Recycling?

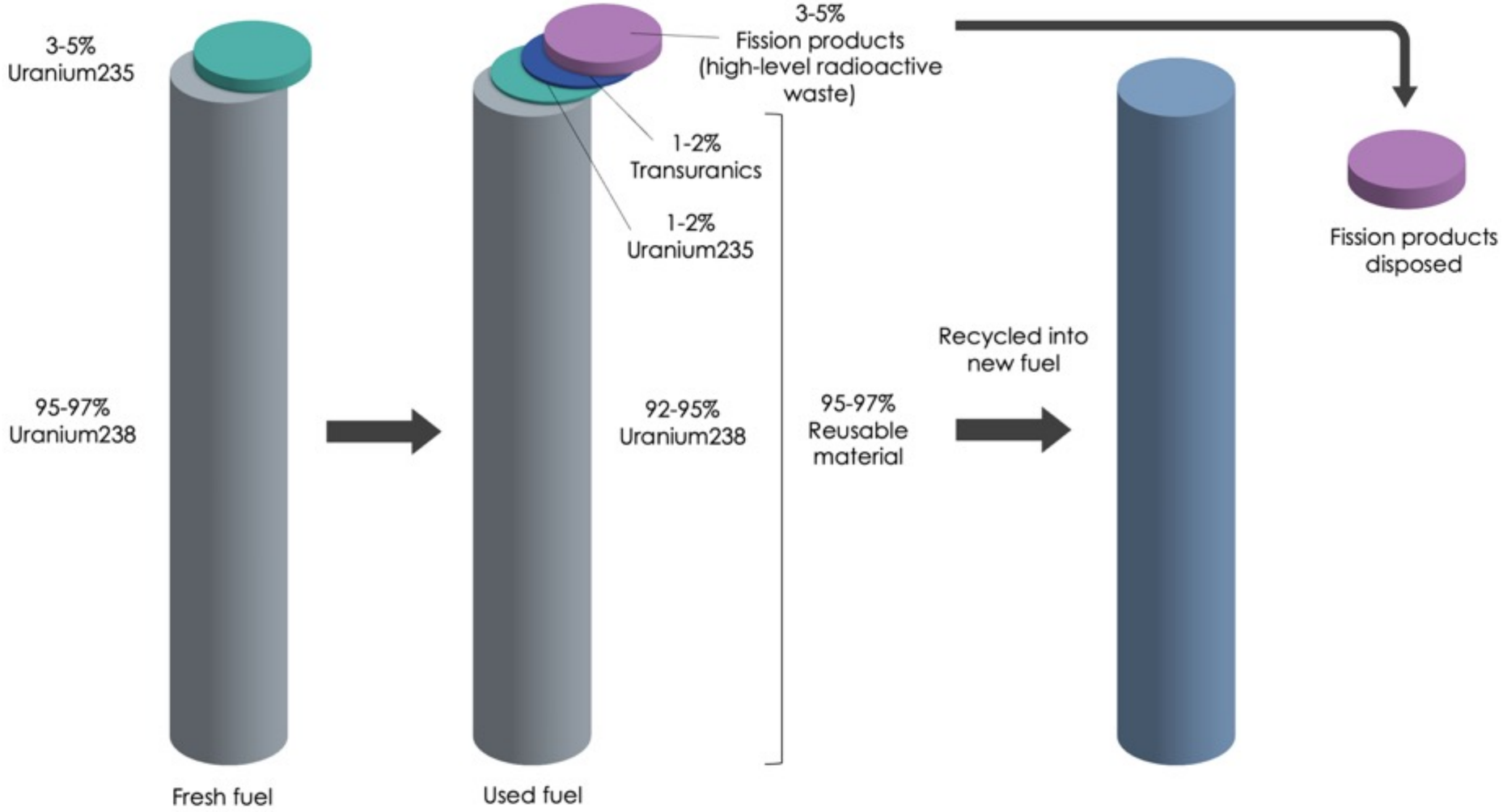
The U.S. has produced about 85,000 tons of used nuclear fuel since the 1950s and continues to produce about 2,000 tons each year

This fuel still contains more than 90% of its original energy content

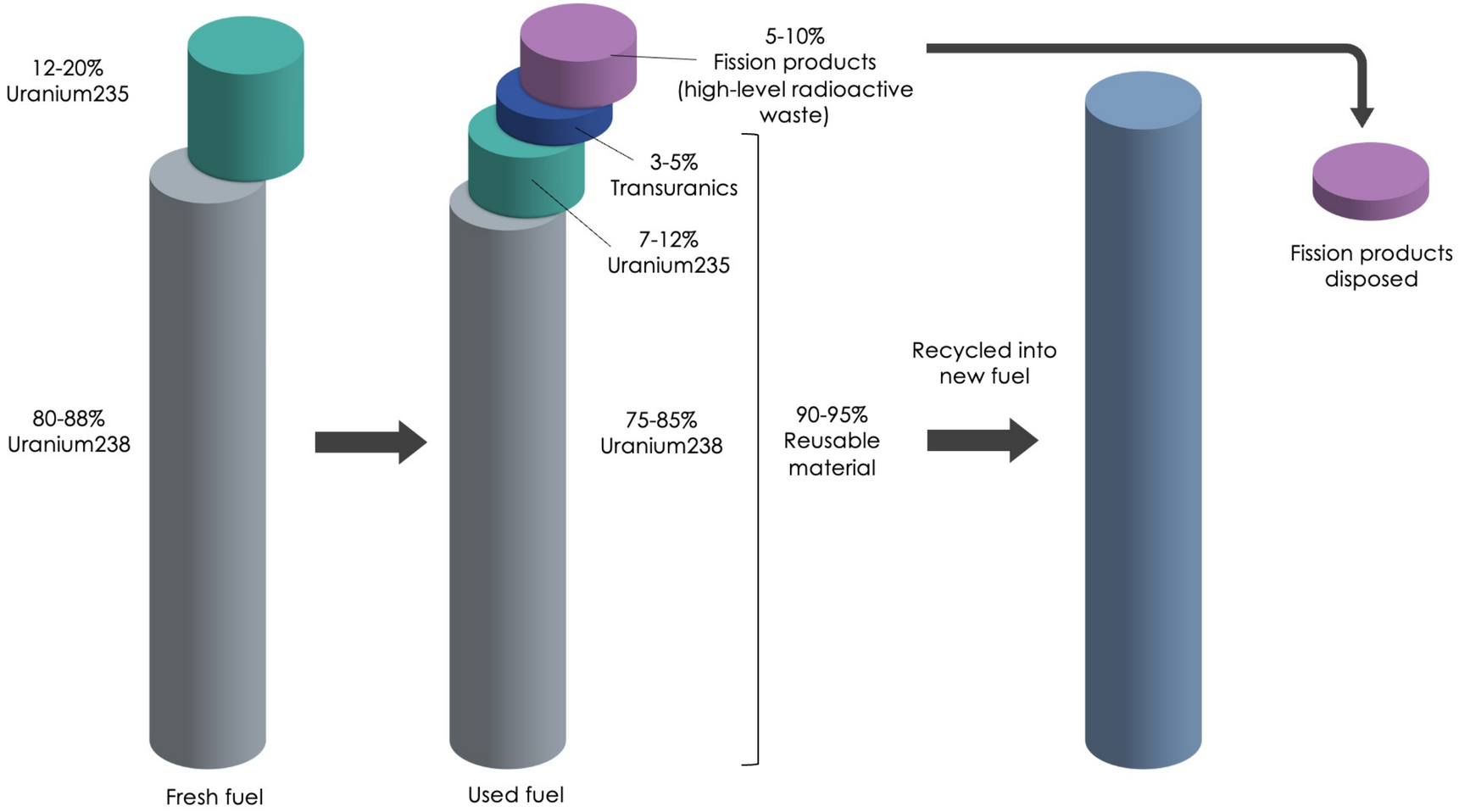
Oklo uses electrorefining to separate uranium and the transuranic elements from the shorter-lived waste, and then fabricates this material into metal fuel for fast reactors

There's enough energy in used fuel to power the U.S. for over 150 years

Recycling used LWR fuel



Recycling used Oklo fuel



Recycling Economics

A Smaller, Simpler, Cheaper System

History of being big and expensive

Fast reactors + electrorefining = paradigm shift

TRU kept together means a ”messier” feed product, and thus a simpler process and facility

Argonne and Landmark Foundation study presented economic models for 100 MT and 400 MT facilities.

Found that Oklo recycling can produce fuel more cheaply than fresh HALEU (today’s market rate is approx. $8k/kg)

Recycling Economics: LWR Used Fuel

100 MT/year pilot facility

- Produce approximately 2 to 3 Oklo cores per year from recycled LWR used fuel
- Produce fuel for about $5k-$10k/kg of 19.75% HALEU equivalent
- Charging for recycling could yield fuel for $500-$800/kg

400 MT/year facility

- Produce approximately 6 to 10 Oklo cores per year from recycled LWR used fuel
- Produce fuel for about $1.9k-$4k/kg of 19.75% HALEU equivalent
- Charging for recycling could yield fuel for -$2.5k/kg (yes negative! You could build plants for less than $1/W)

(Current market rate for fresh HALEU would be greater than $11k /kg)

Recycling Economics: Oklo Used Fuel

100 MT/year pilot facility

- Produce fuel for about $600/kg of 19.75% HALEU equivalent

400 MT/year facility

- Produce fuel for about $210/kg of 19.75% HALEU equivalent

(Current market rate for fresh HALEU would be greater than $11k /kg)

OKLO AWARDED FOUR U.S. DOE PROJECTS TOTALLING OVER $15 MILLION TO DEVELOP WASTE-TO-ENERGY FUEL RECYCLING

TECHNOLOGY COMMERCIALIZATION FUND

Develop advanced sensors for key recycling process efficiency improvements

ARPA-E OPEN

Utilize machine learning and digital twinning for recycling efficiency improvements and material accountability

ARPA-E ONWARDS

Demonstrate the recycling process end-to-end and develop the technical basis for the commercial-scale fuel recycling facility

ARPA-E CURIE

Demonstrate the conversion of used oxide fuel into metal, enabling the recycling of waste from the current fleet into advanced reactor fuel

RECYCLING TIMELINE

2020

Oklo begins pre-application for its recycling facility

2025

Oklo submits license application

2027-2028

Construction begins


OKLO