

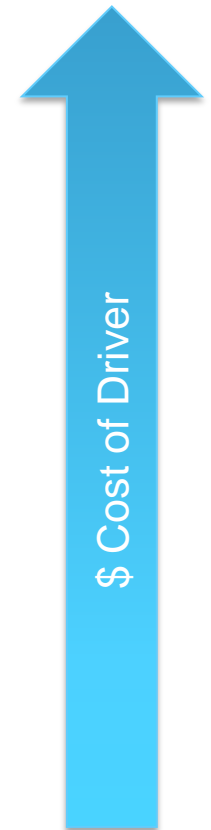
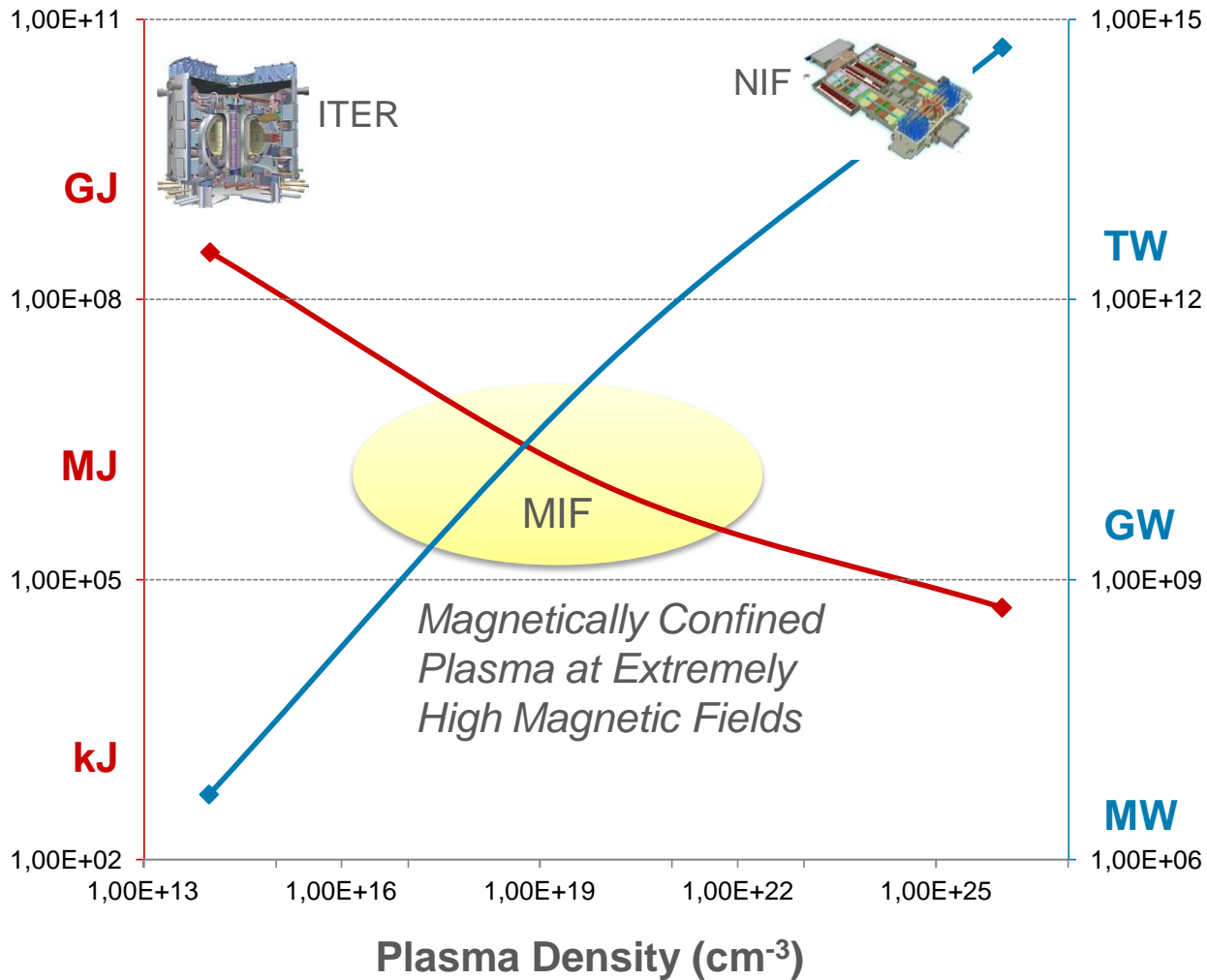


# General Fusion

# A Middle Ground?

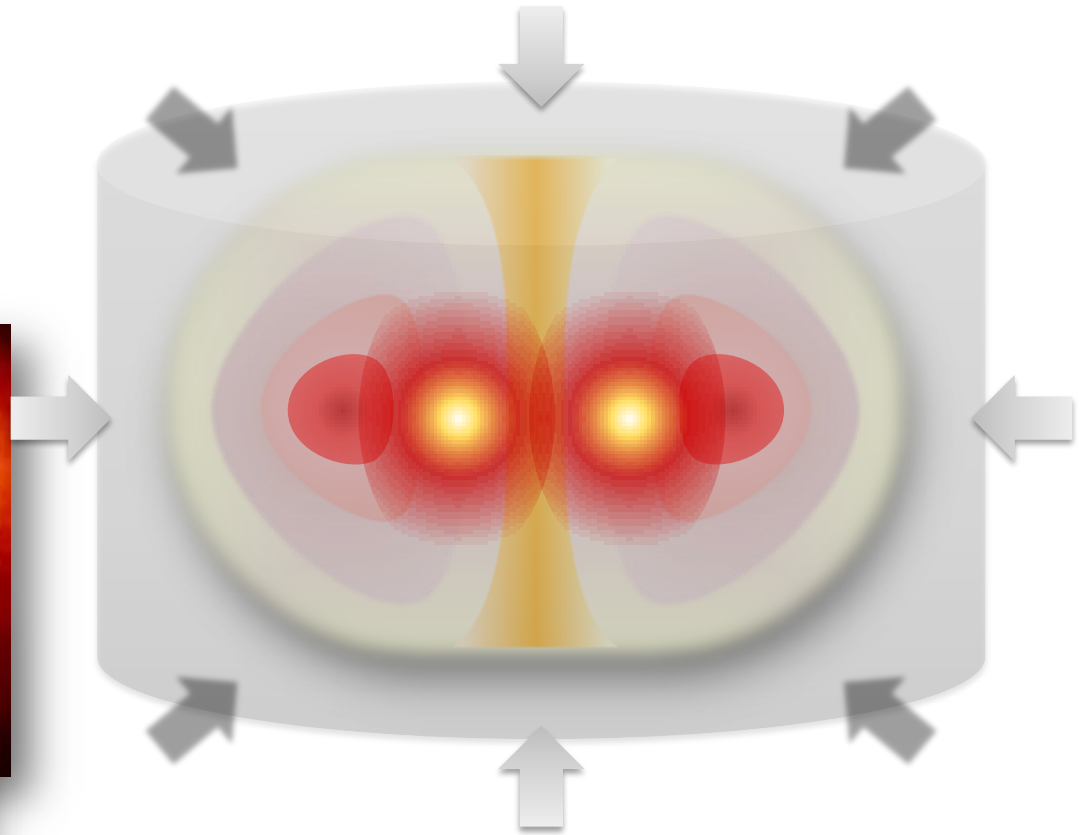
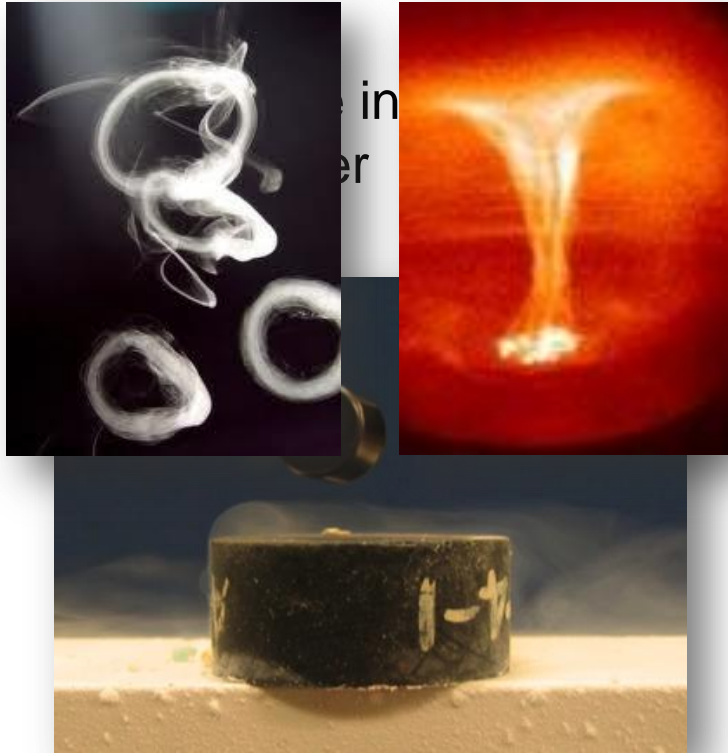
Plasma Energy

Driver Power



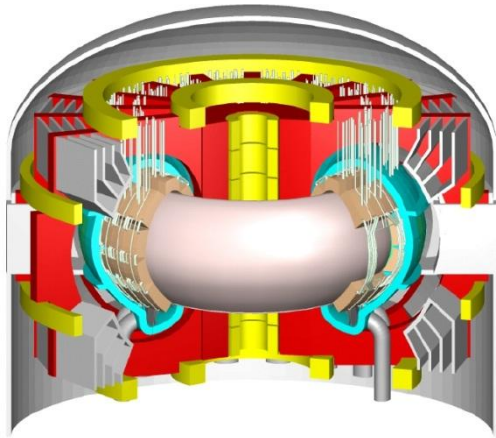
# Magneto-Inertial Fusion

1. Form a compact torus of plasma



# MCF, MIF and ICF

## Magnetic Fusion



**5 T**

Plasma pressure held  
by material strength of  
magnetic coils

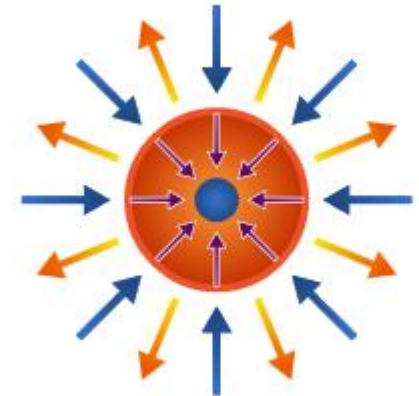
## Magneto-Inertial Fusion



**1000 T (4 Mbar)**

Plasma pressure  
held by inertia of  
surrounding wall

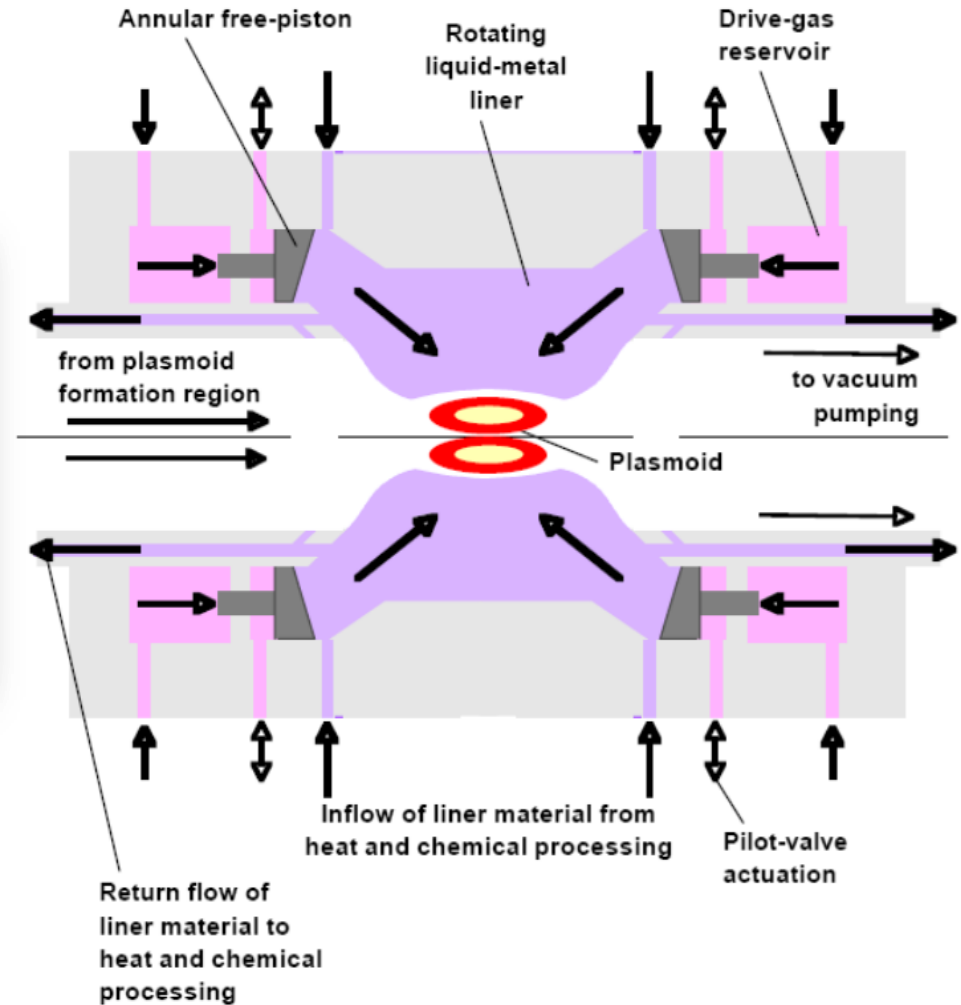
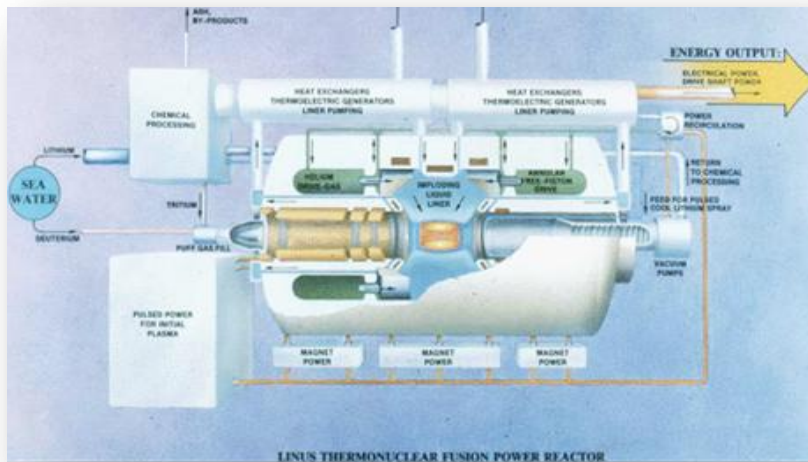
## Inertial Fusion



**0 T (Gbar)**

Plasma pressure  
held by its own  
inertia

# LINUS – Naval Research Laboratory, 1976

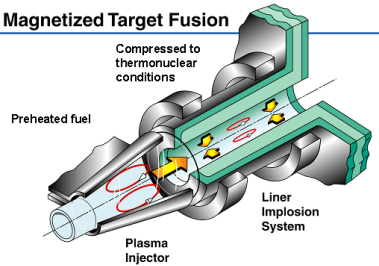




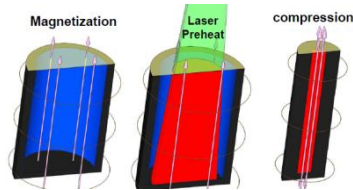
# Magneto-Inertial Fusion Research



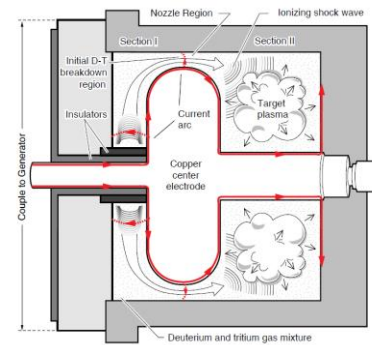
## Magnetized Target Fusion



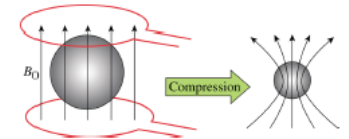
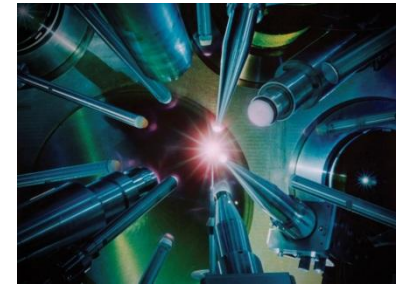
FRX-L experiment ongoing  
 ➤ General Fusion Partner



MagLIF experiment to start tests in 2014



VNIIEF (Russia) MAGO

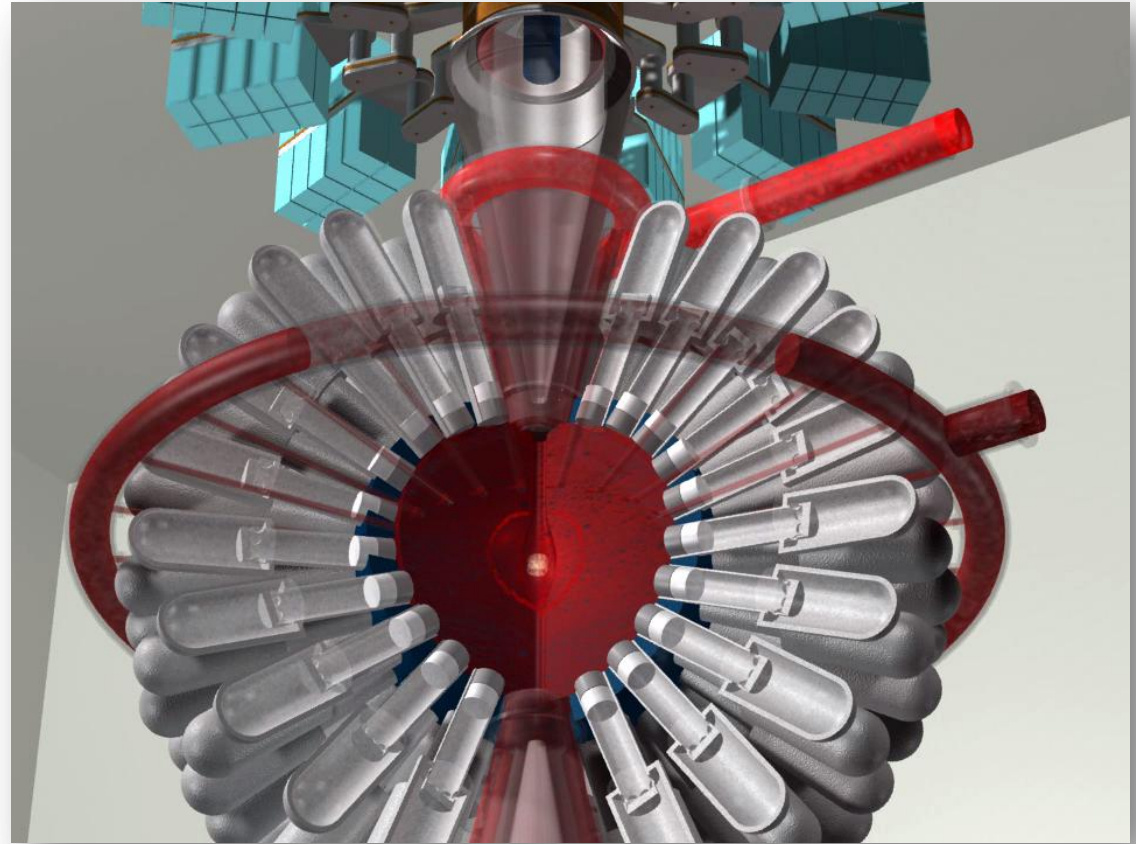


Added magnetic field to Omega laser experiment  
 ➤ Yield increased 30%

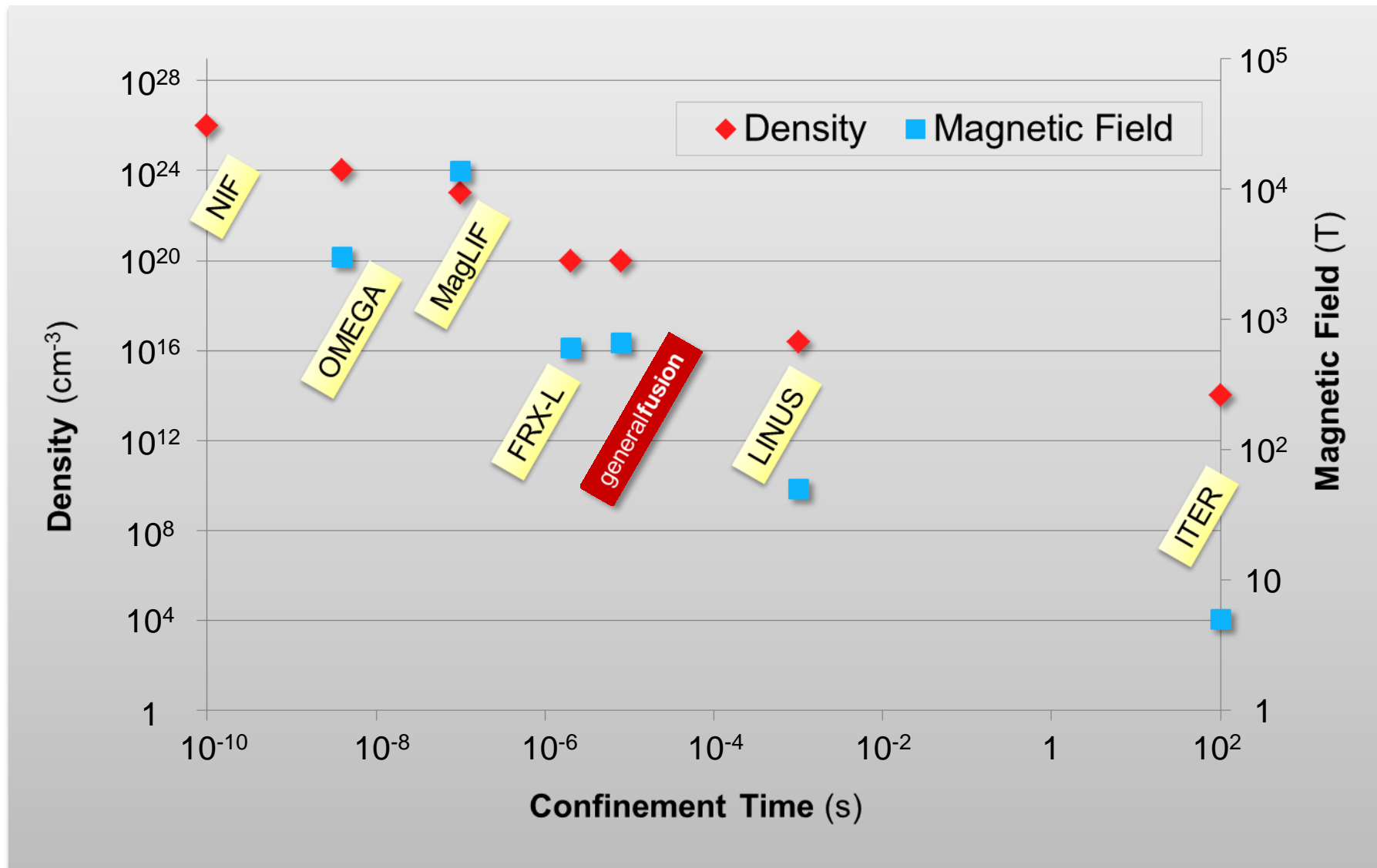


MIF project initiated, tests in 2-3 years  
 ➤ similar to FRX-L experiment

# General Fusion's Acoustically Driven MIF



# Fusion Parameter Space





# Practical

## Compressed gas driver

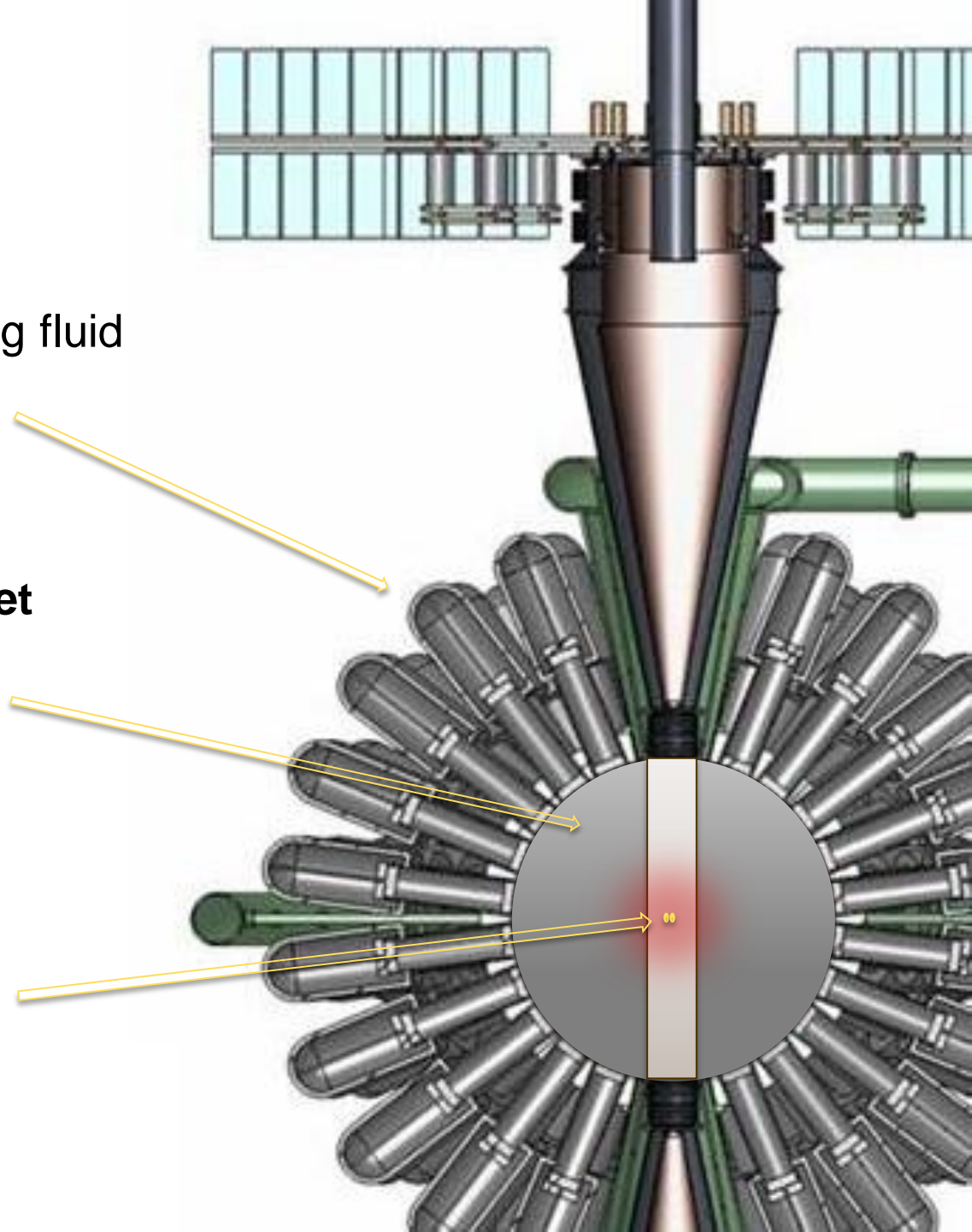
- Uses power plant working fluid
- Low cost

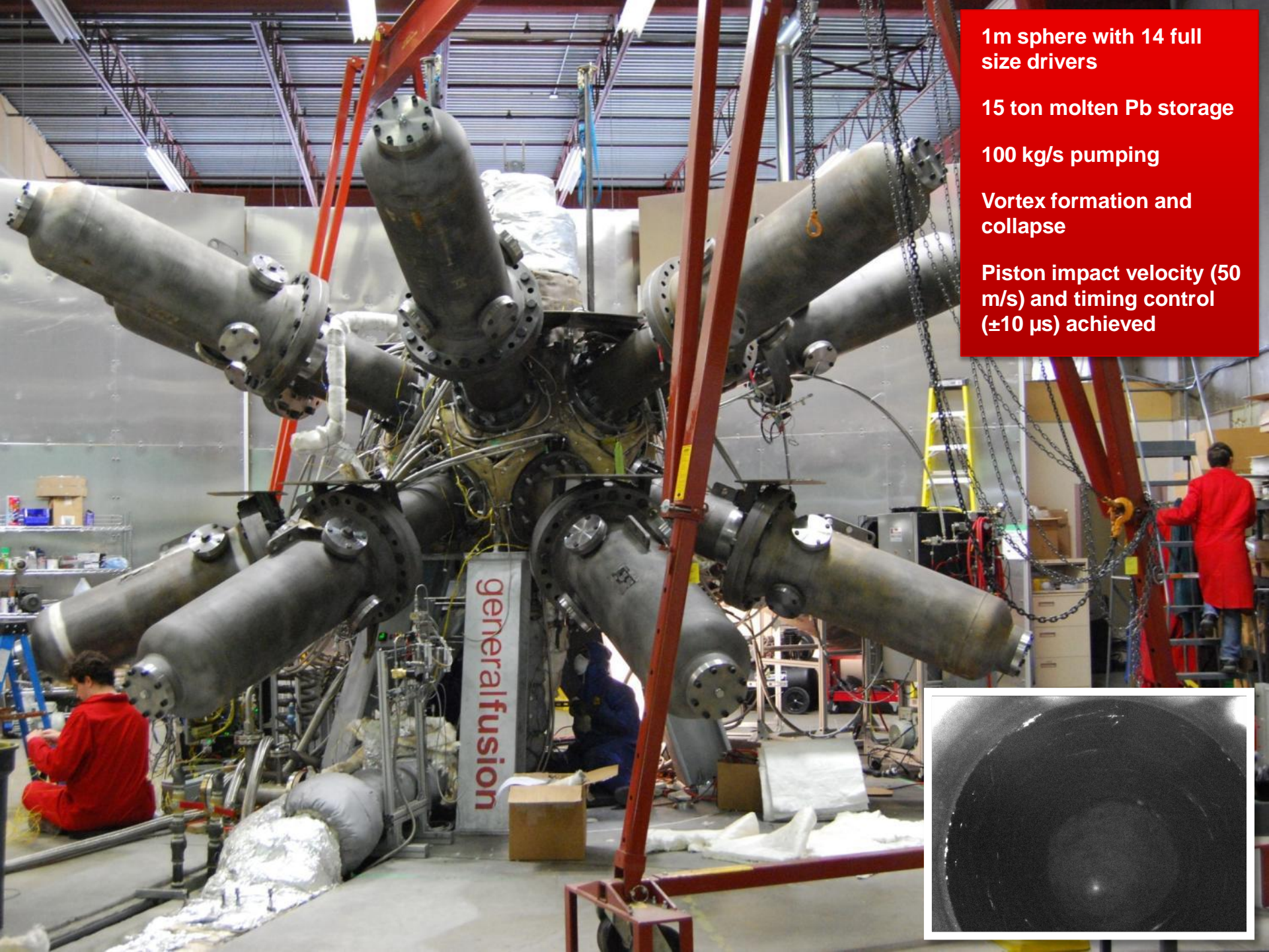
## Thick Lead-Lithium blanket

- Extracts heat
- Shields structure
- Breeds tritium

## Plasma target

- Pulsed system with no consumables





1m sphere with 14 full size drivers

15 ton molten Pb storage

100 kg/s pumping

Vortex formation and collapse

Piston impact velocity (50 m/s) and timing control ( $\pm 10 \mu\text{s}$ ) achieved





**Largest Plasma Injectors  
ever built**

**Record spheromak  
plasma energy (~100 kJ)**

**Plasma temperatures over  
300 eV (>4.5 M°C)**

**Density of  $10^{16}$  cm<sup>-3</sup>**





Clean energy.  
Everywhere.  
Forever.



**generalfusion**

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