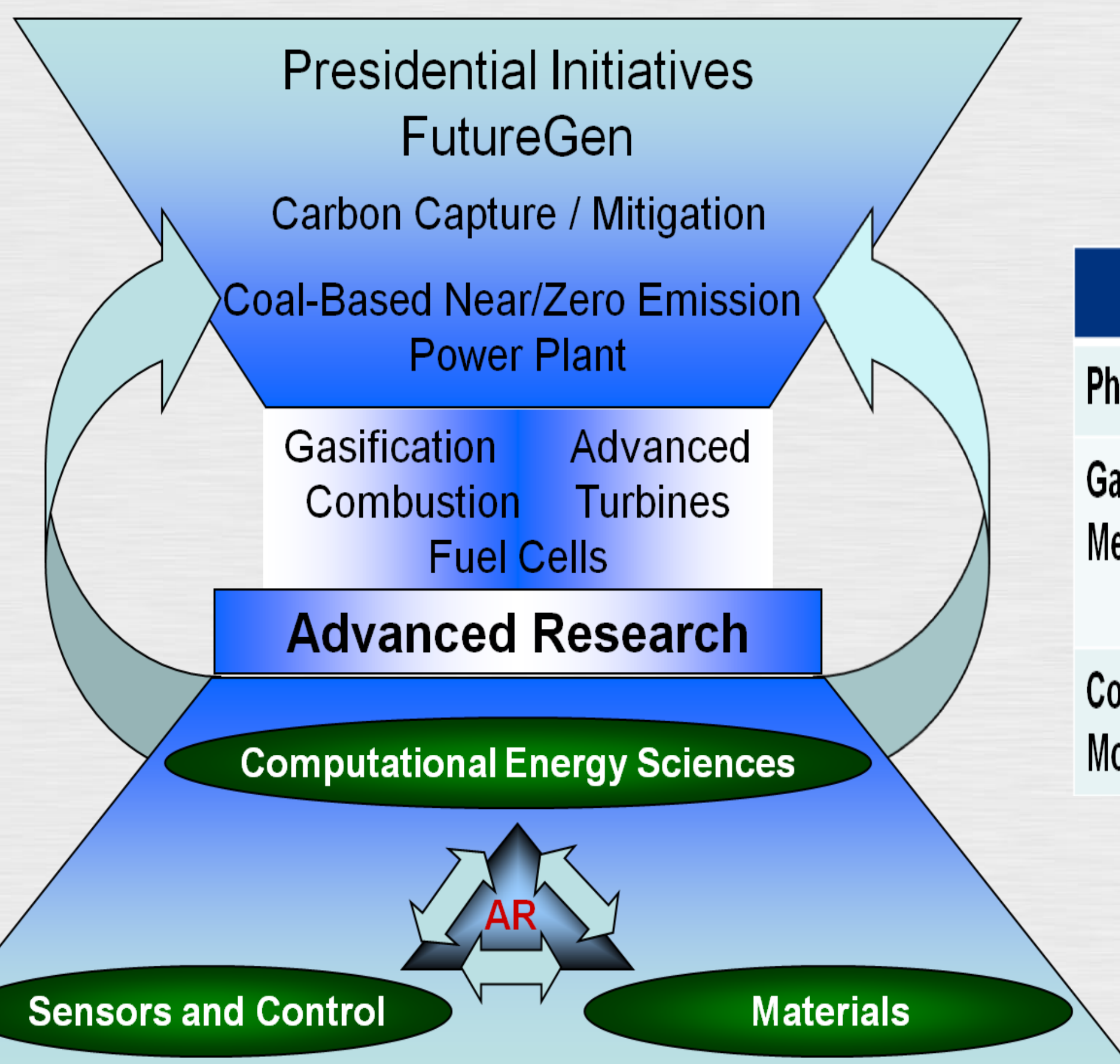


Advanced Research Program Requirements Flow-down Process

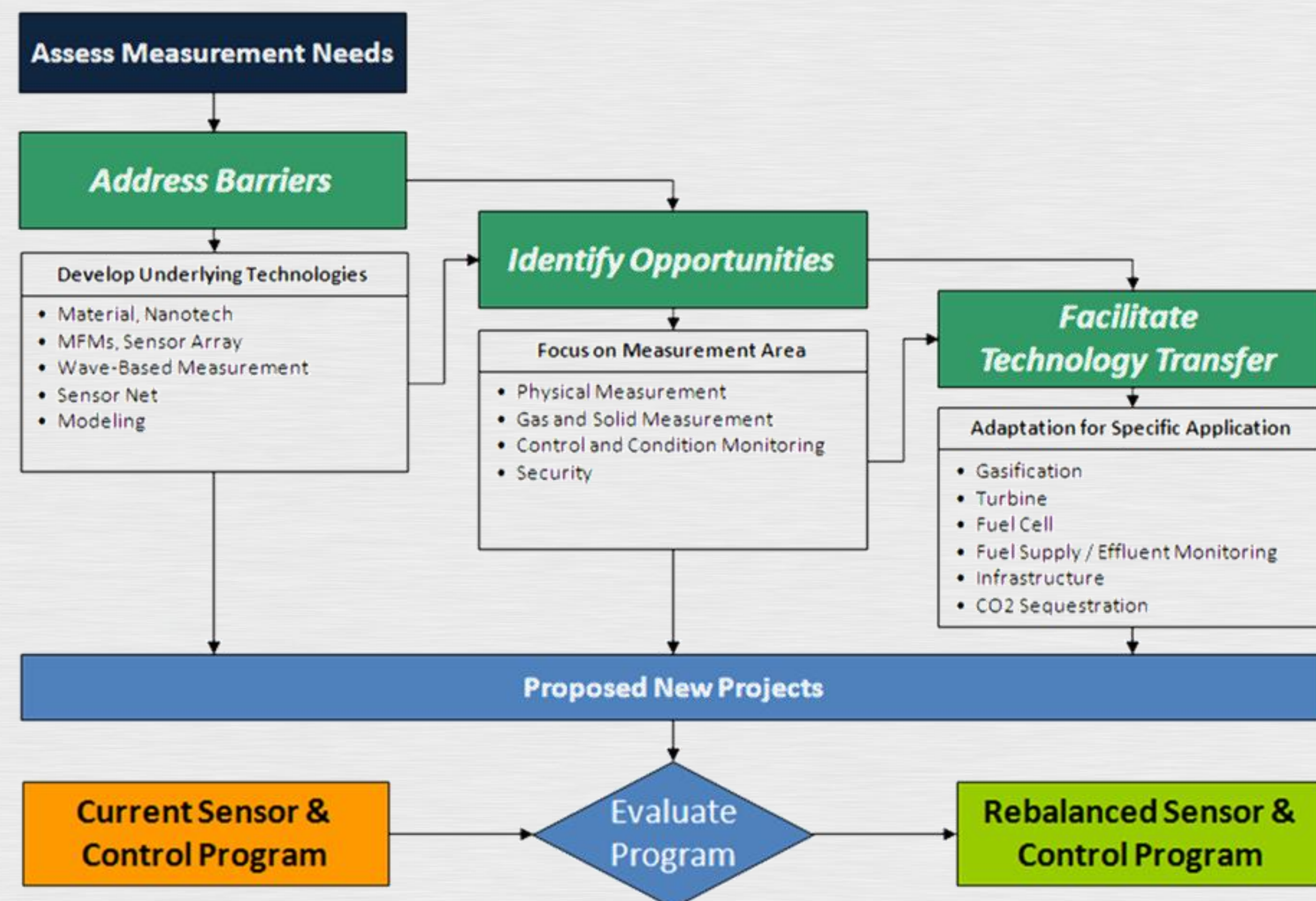


AR Focus and Goals



Measurement Area Goals	
Physical Measurements	• Temperature, pressure & flow for harsh environments
Gas and Solid Measurements	• Low cost gas sensors for high temperature environments • Trace level contaminant detection • Real time solids characterization
Control and Condition Monitoring	• Creation of artificially intelligent, integrated controls • Information creation & exchange for systems management

Portfolio Management and Technology Transfer

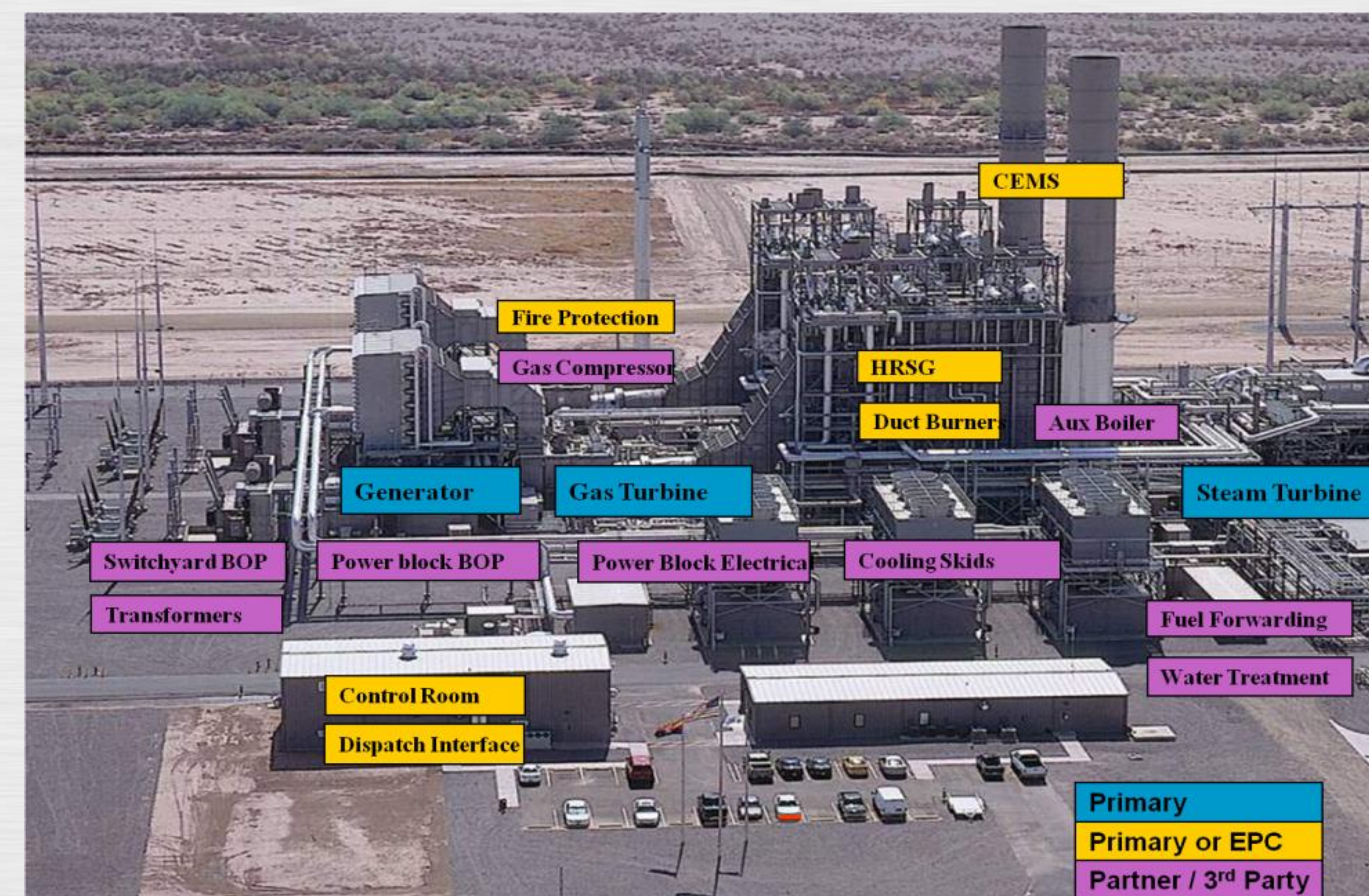


Current Sensor & Control

Current measurement systems are inadequate for advanced power systems. Slow response time, low reliability, coarse control, large physical dimensions, materials incompatible.

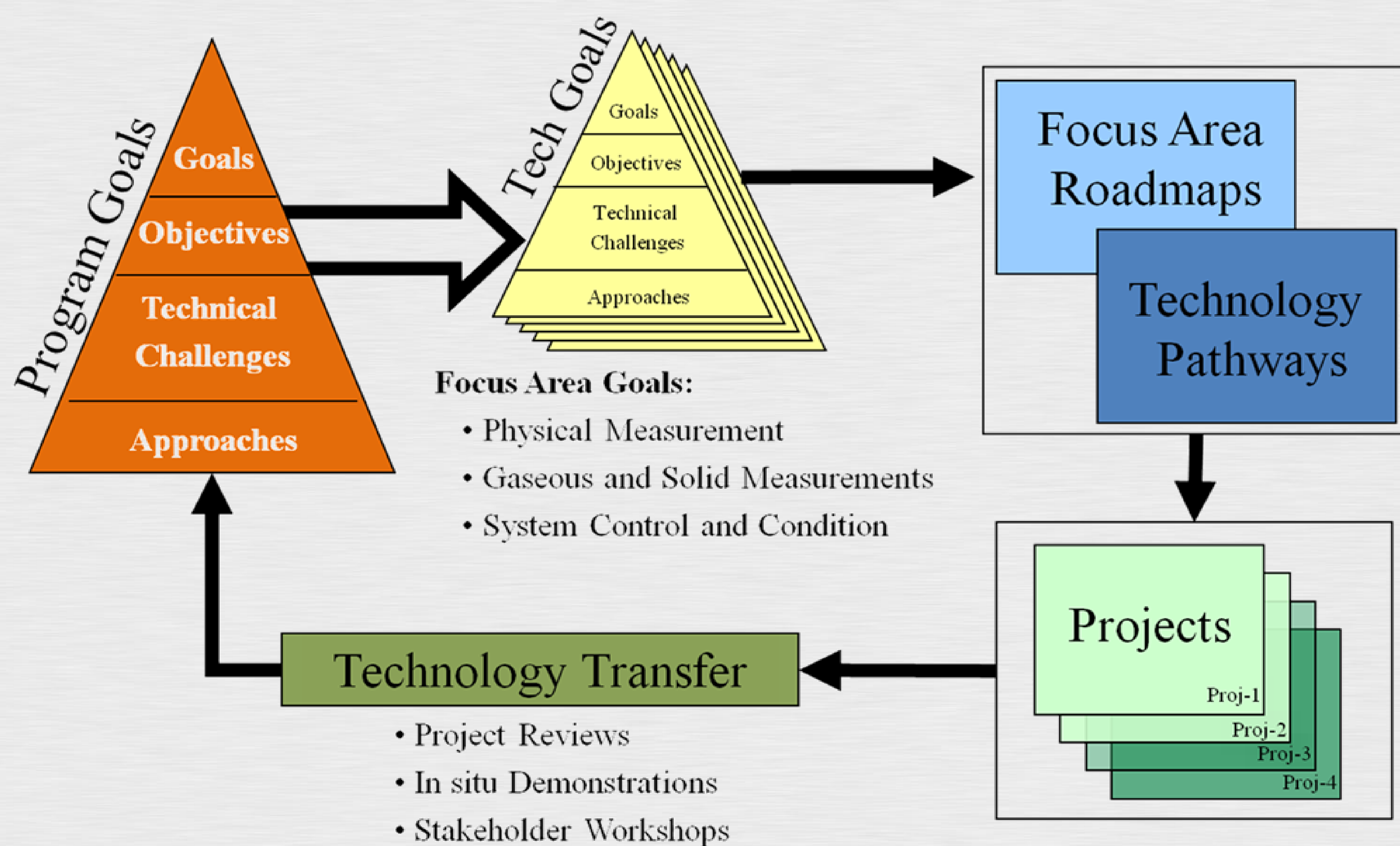
Future Sensor & Control

Accurate and optimized, highly automated, dynamically flexible plant operation with high efficiency, low emission, minimum maintenance requirement.



Requirements Framework

System Needs Traceable to Projects



Advanced Research