

# Climate Change Innovation & Technology Framework (CCITF) Programs

Economic Development and Trade

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# Climate Change Innovation and Technology Framework (CCITF)

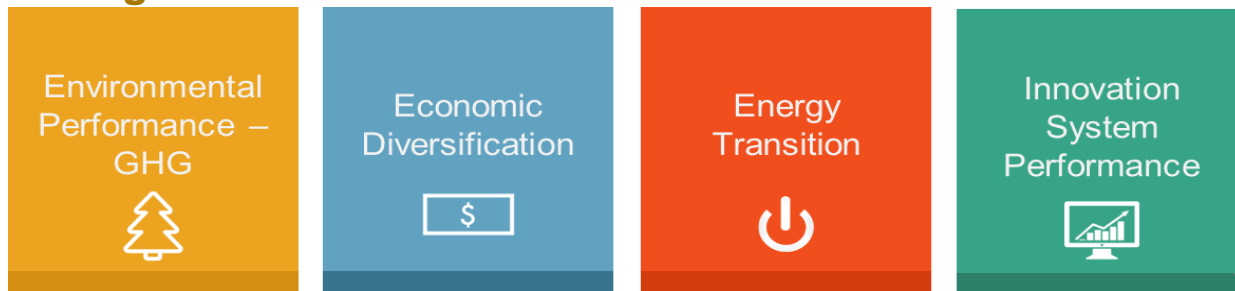
- Climate Change Advisory Panel report Innovation and technology as critical in advancing Alberta's response to Climate Change.
- Recommendations included reducing barriers to deployment of new technologies, considering non-hydrocarbon technologies and investment in bolder ventures.
- Recommended a portfolio approach; invest in multiple technologies' to manage risk associated in underperformance in one technology or sector.
- Recommendations resulted in the establishment of the Climate Technology Taskforce and the Climate Change Innovation and Technology Framework.

(<https://open.alberta.ca/publications/climate-change-innovation-and-technology-framework-2017> )

# Climate Change Innovation and Technology Framework (CCITF)

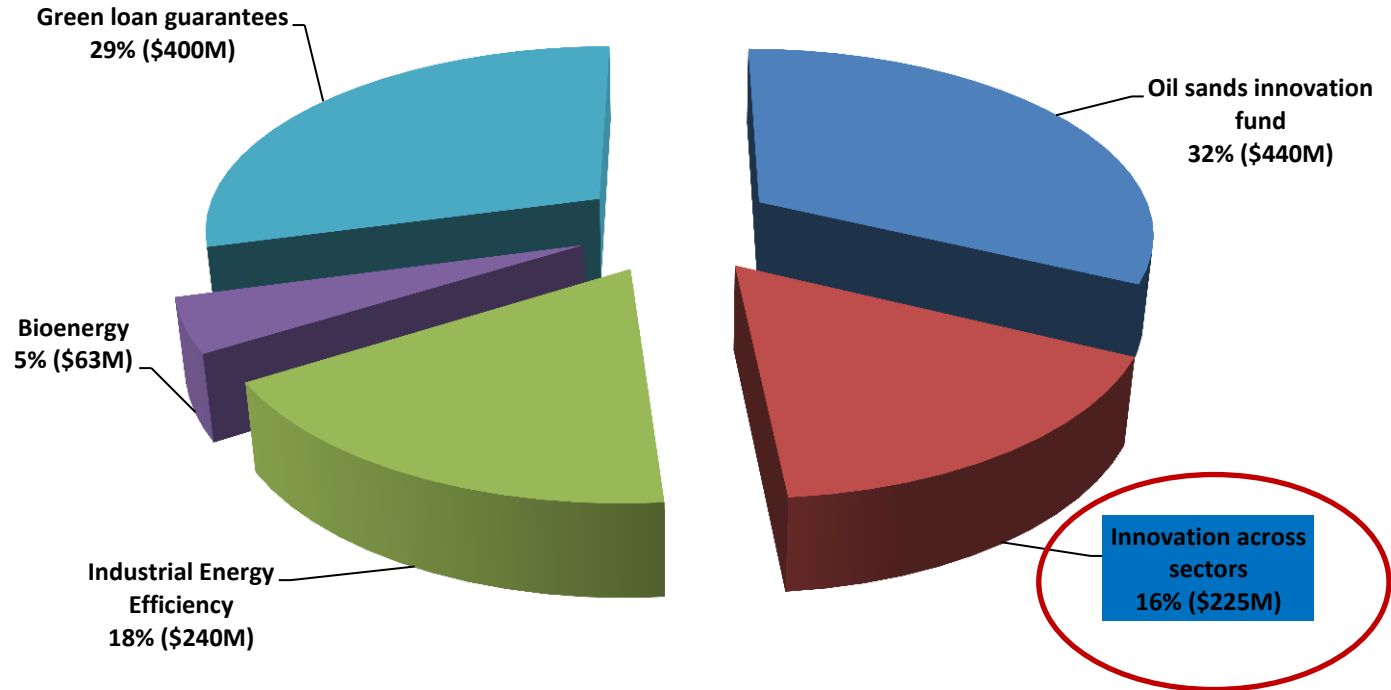
- **VISION:** By year 2030, Alberta's use of innovation and clean technology ("Clean Innovation") will accelerate the shift to a lower carbon economy, generating significant environmental and economic benefits

- **Strategic Outcomes:**



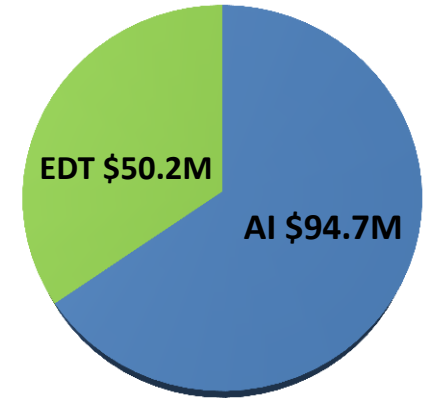
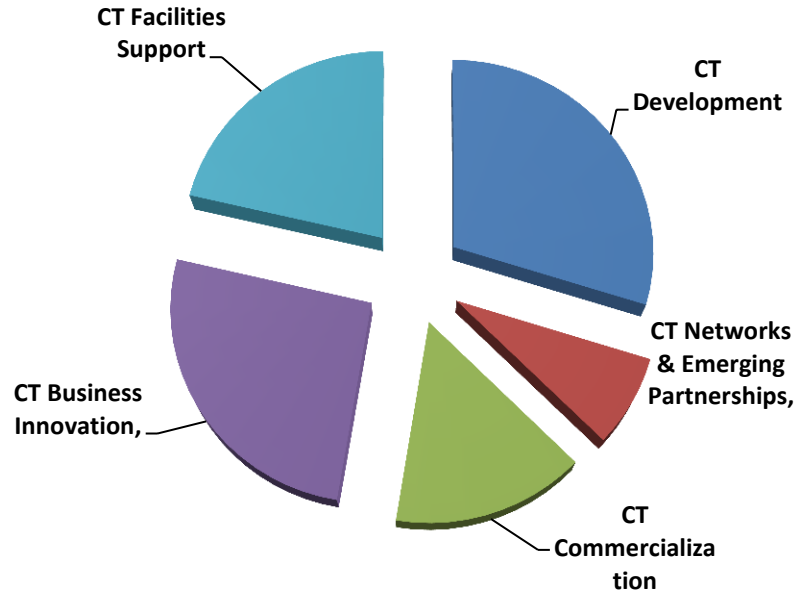
- Enables coordination and integration through support for research, innovation, education, and entrepreneurship
- Aligns with the Clean Innovation related targets in **Alberta Research & Innovation Framework (ARIF)**

# Alberta's \$1.4B plan to drive innovation, boost energy industry & diversify the economy



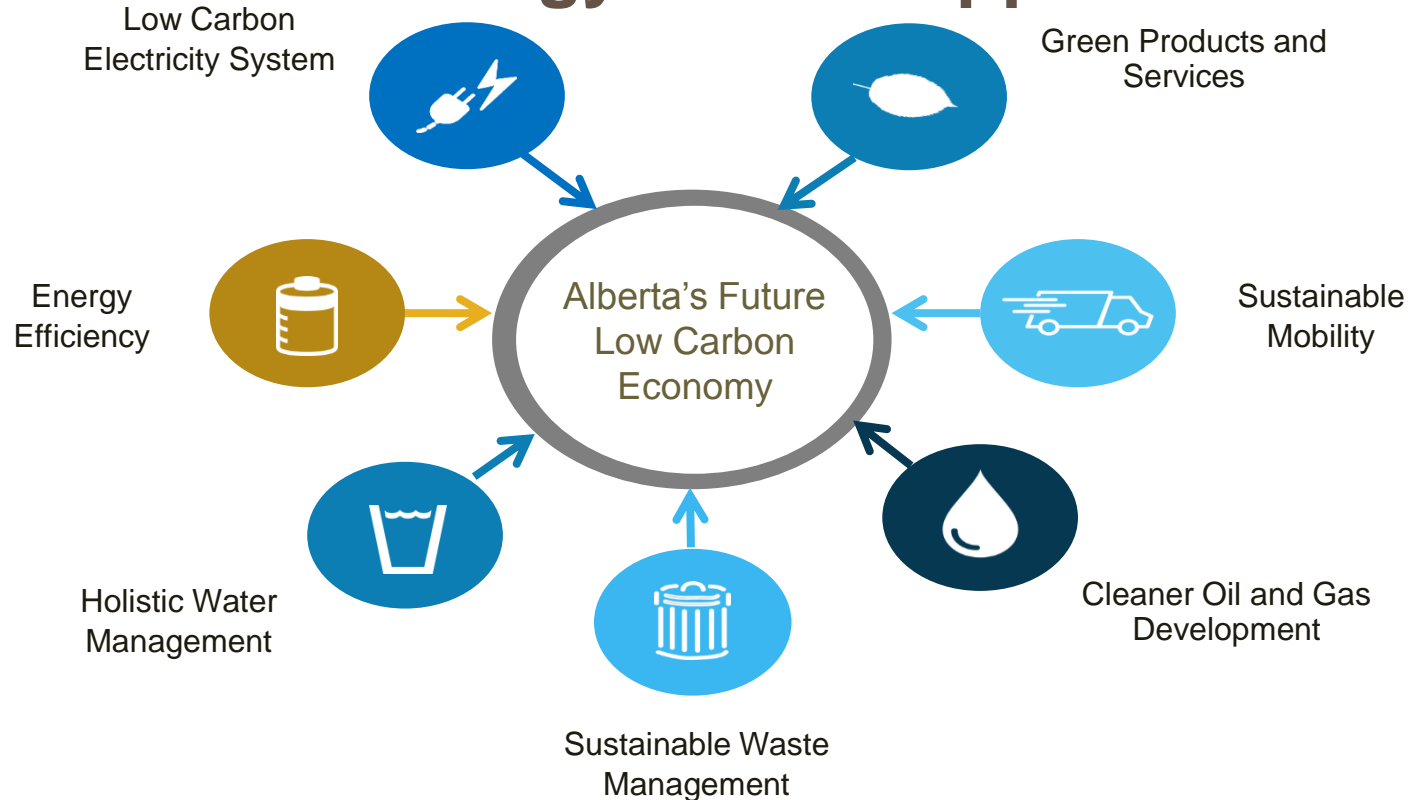
# CCITF Budget Envelope for AI and EDT- delivered programs

(Total:\$144.9M over 3 years)

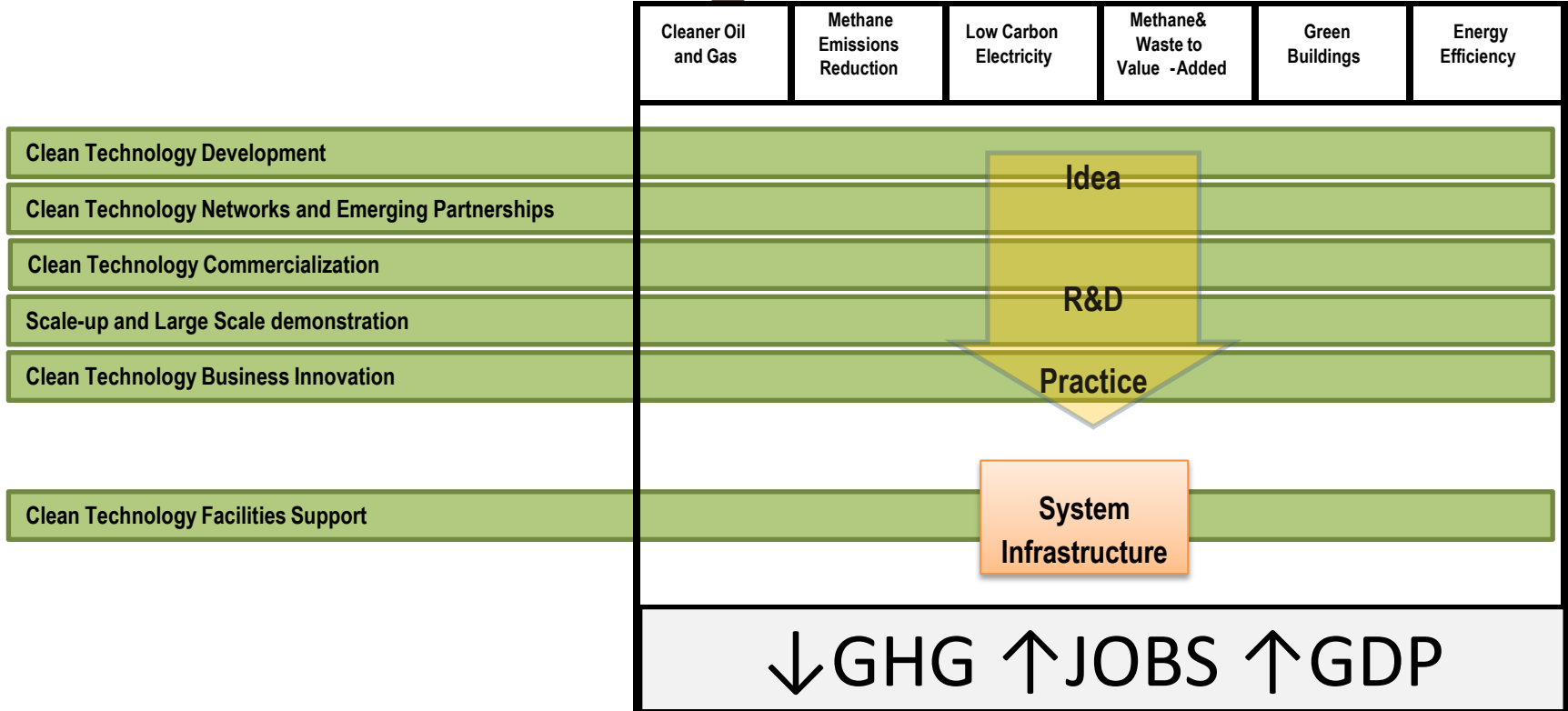


# Where do we focus?

## Clean Technology Sector Opportunities



# CCITF Program Streams



## Clean Technology Development

Supports research, innovation and highly qualified personnel development initiatives and projects by Alberta's universities, polytechnics, and colleges; and supports applied research and development and innovation projects by Alberta's industry and research organizations to advance pre-commercial technology development to facilitate GHG emissions reductions in Alberta.

- e.g. green building technology, methane processing, renewable microgrid technology proofs of concept research; applied research to prepare oil and gas, waste management, renewable (storage, renewables integration) and other technology for field testing and demonstration

## Clean Technology Networks and Emerging Partnerships

Strengthens the Alberta clean technology innovation ecosystem through enhanced knowledge transfer; providing advice, development, and connections to aid clean technology businesses; creating networks for information, knowledge, and resource sharing; and capitalizing on strategic clean technology or high potential emerging opportunities through partnerships that facilitate GHG emissions reductions developments in Alberta.

- e.g. dedicated technology development advisors support for SMEs and start-ups, or community of practice in green buildings, including businesses and colleges
- e.g. partnerships with leading clean tech jurisdictions & companies to accelerate development and commercialization of artificial intelligence technologies, and sensor and autonomous systems to increase industrial efficiency.



### Clean Technology Commercialization

Supports innovation projects by Alberta's SMEs to advance technology to market to reduce GHG emissions in Alberta and access global markets, creating low carbon economic growth

- e.g. expansion of Alberta Small Business Innovation & Research Initiative, Product Demonstration Program (PDP) for GHG emissions reduction

### Scale-up and Large Scale demonstration

Supports the creation and operation of commercial scale demonstration projects and facilities requiring large investments (\$50M to \$100 million) to facilitate GHG emissions reduction in Alberta, while supporting economic growth and diversification, electricity system transition, and increased innovation capacity

- e.g. in situ oil sands, industrial energy efficiency and renewables demos

Supports innovation projects by Alberta's SMEs with innovation capacity in pursuing significant growth opportunities in low carbon economy through technology adoption, product and market innovation, energy efficiency, and productivity enhancement

- e.g. business audits and planning to transition to lower carbon products and business models, with deployment financing secured through venture capital or banks

Supports enhancement of facilities to test and validate GHG emissions reduction solutions in Alberta, while supporting economic growth and diversification, electricity system transition, and increased innovation capacity

- e.g. cleaner oil sands technology testing, national emissions research and test centre, electricity technology testing, methane and biomass/biowaste testing, and green building technology testing

# How does the Program Suite advance a Sector Pathway?

Program	Sample Sector Activity within a Program
Clean Technology Development	Development of new extraction and value-added production processes technologies for oil and gas
Clean Technology Networks and Emerging Partnerships	Leverage partnerships to speed development of value-add solutions from oil sands tailings waste e.g. vanadium batteries modules
Clean Technology Commercialization	Verify end-user commercial viability of new high efficiency SAGD boilers built by small companies
Scale-Up and Large Scale Demonstrations	Field testing at scale of new in situ technologies to significantly reduce carbon intensity
Clean Technology Business Innovation	Transition oil and gas heat recovery products to new geothermal and other lower carbon application areas
Clean Technology Facilities Support	Support shared-use technical facilities for in situ, methane emissions and value-add technology testing.

# Thank you

Questions:

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