



Sustainable Transportation Action Research Team (START)

Driving sustainable shifts in transportation



OUR VISION OF SUSTAINABILITY

START conducts research and engages governments, industry and communities to actively transition the transportation sector towards a sustainable system that effectively:

- limits emissions and waste to be within the planet's ability to absorb them (e.g. deep cuts to greenhouse gas emissions);
- uses renewable resources efficiently (e.g. wind, solar, biofuels) while minimizing consumption of non-renewable resources (e.g. fossil fuels);
- is economically efficient in transition and in operation, affordable to individuals and communities and supportive of a vibrant economy; and
- allows the basic access needs of individuals and societies to be met safely and in a manner consistent with human and ecosystem health.

TRANSPORTATION IS NOT SUSTAINABLE

Transport accounts for roughly one quarter of global greenhouse gas (GHG) emissions, and nearly one quarter of emissions in Canada. Given Canada's ambitious GHG reduction target for 2030 (30% below 2005 levels), emissions reductions will be required from all forms of transportation activity. Decades of evidence confirms that this transition will not happen by itself. Instead, governments, researchers, industry and other stakeholders need to work together to actively transition to low-carbon transportation technologies and practices, while maintaining economic productivity and providing fair access to all citizens.

Deep decarbonization of transportation inevitably requires improvement in the efficiency of conventional vehicles, reduced travel demand and a substantial shift to alternative fuels such as electricity, hydrogen or biofuels. According to the International Energy Agency, stabilization of global GHG concentrations will require that virtually all new vehicle sales be alternative fuel vehicles by 2040, powered by electricity and biofuels.

However, despite 35 years of promises and high optimism about transitioning transportation, few real changes have occurred. Fossil fuels still account for 95% of Canadian transport energy use, with little reduction in transportation emissions since 2005; no single alternative fuel vehicle technology has achieved more than 1% of market share in Canada. A real transition needs to start now.

The Sustainable Transportation Action Research Team (START) in the Faculty of Environment at Simon Fraser University is poised to help provide these solutions by offering a comprehensive approach to transportation research, one that integrates the best methods and perspectives available to fully understand technology assessment, market acceptance, business strategy and public policy.

FILLING A CLEAR GAP

There is a clear need for a comprehensive, integrative approach for lowering emissions to meet future targets, both in B.C. and beyond provincial borders. In 2014, the Pacific Institute for Climate Solutions brought together stakeholders from the academic, NGO, government and private sector, concluding that "...much of the work [in transportation] happening in the province is siloed...and there is limited awareness of the current research and innovation across sectors and research institutions in B.C." START addresses this gap by providing innovative, inclusive and interdisciplinary solutions.

PROVIDING POLICY AND INDUSTRY-RELEVANT RESEARCH

START produces policy- and industry-relevant sustainable transportation research in three key aspects of transportation: vehicles and drivetrains, fuels and infrastructure, and mobility and travel demand. For each aspect, we aim to produce comprehensive research to assess different transportation technologies, practices and solutions according to technological feasibility, consumer and citizen acceptance, business and innovation strategy and public policy.

BUILDING ON OUR STRENGTHS

SFU has a long-standing reputation for facilitating exceptional interdisciplinary, community-engaged research on regional, national and international levels. Building upon this tradition and leveraging our existing partnerships, we provide a unique platform for engaging stakeholders in academia, government, energy, auto manufacturing and non-governmental organizations in the development of solutions around sustainable transportation systems.



SAMPLE QUESTIONS TO EXPLORE TOGETHER

- What specific policies are needed for deep cuts in transportation GHGs? What climate policies are more likely to be fair and politically acceptable?
- Which low-carbon fuels and technologies can most efficiently cut emissions for passenger vehicles, trucks, fleets, freight, trains, marine, aviation and off-road?
- What policy approach is most economically efficient? When and how should governments pick winning technologies to support, versus letting the market decide?
- What do consumers and citizens want and how can markets satisfy or shift their preferences?
- How can industry best channel innovation activities to meet consumer demand and comply with environmental policy?
- How should alternative fuels be produced? How should fueling infrastructure be rolled out?
- How will shifts in our transportation system impact travel demand and our mobility choices and decisions?

WE INVITE YOU...

...to partner with the Sustainable Transportation Action Research Team and help us:

- become leaders in sustainable transportation systems, producing innovative and integrated research;
- provide evidence-based policy advice and business strategy;
- bring together stakeholders in the transportation sector and build networks of strategic partnerships;
- disseminate research, education and training to stakeholders and the public;
- provide a foundation for faculty, graduate and undergraduate students to work together to develop innovative transportation solutions;
- support the piloting and demonstration of innovative systems and technologies, and;
- shape Canada's transportation future.

For more information, please contact:

The Office of the Dean,
Faculty of Environment
(778) 782-8797 • fenvdean@sfu.ca
sfu.ca/environment



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