

Position in the Innovation Spectrum

SDTC supports projects through the early stages of demonstration and development, typically starting around Technology Readiness Level (TRL) 3 or 4, and ending at TRL 7 or 8. Through these stages, the basic principles and concepts have been formulated and the concept needs to be demonstrated experimentally. At this stage, the commercial application and path to market is not yet clear, and cleantech entrepreneurs have a difficult time attracting the usual investors who tend to support later-stage development and commercialization (i.e., TRL 7 and higher). The TRL scale is a very useful tool for classifying the types of projects that would benefit from SDTC funding, and as a methodology for SDTC to measure and report on the advancement of clean technologies as they advance along the TRL spectrum.

Project Start and End Positions in the Innovation Spectrum

TRL	START			END		
	# of Projects	SDTC \$	Total Eligible Costs \$	# of Projects	SDTC \$	Total Eligible Costs \$
3	1	\$3,420,000	\$11,516,019	0	0	0
4	23	\$85,315,411	\$351,103,610	3	\$16,432,034	\$66,784,215
5	39	\$120,930,024	\$422,283,401	2	\$1,787,877	\$7,451,899
6	31	\$92,681,262	\$502,797,700	14	\$39,516,437	\$141,087,141
7	5	\$17,246,375	\$63,642,867	35	\$108,771,696	\$617,411,161
8	0	\$0	\$0	43	\$148,976,249	\$509,191,731
9	0	\$0	\$0	2	\$4,108,780	\$9,417,450
Total	99	\$319,593,073	\$1,351,343,597	99	\$319,593,073	\$1,351,343,597

*Includes only completed projects from 2008A+ (TRL Start for projects 2007B and earlier unavailable)

Technology Readiness Levels²

Technology Readiness Levels (TRLs) are a measure to evaluate the maturity of an evolving innovation. This scale, developed to assist in evaluating the maturity of goods and/or services for the Build in Canada Innovation Program (BCIP), broadly evaluates all goods and/or services while recognizing that not all development cycles are the same. This is not a linear process and many goods and/or services, may skip or quickly address certain stages of readiness.

Level 9: Actual technology proven through successful deployment in an operational setting. At this level there is actual application of the technology in its final form and under real-life conditions, such as those encountered in operational test and evaluations. Activities include using the innovation under operational conditions.

Level 8: Actual technology completed and qualified through tests and demonstrations. At this level the technology has been proven to work in its final form and under expected conditions. Activities include developmental testing and evaluation of whether it will meet operational requirements.

Level 7: Prototype ready for demonstration in an appropriate operational environment. At this level the prototype should be at planned operational level and is ready for demonstration of an actual prototype in an operational environment. Activities include prototype field testing.

Level 6: System/subsystem model or prototype demonstration in a simulated environment. At this level a model or prototype is developed that represents a near desired configuration. Activities include testing in a simulated operational environment or laboratory.

Level 5: Component and/or validation in a simulated environment. At this level the basic technological components are integrated for testing in a simulated environment. Activities include laboratory integration of components.

Level 4: Component and/or validation in a laboratory environment. At this level basic technological components are integrated to establish that they will work together. Activities include integration of “ad hoc” hardware in the laboratory.

Level 3: Analytical and experimental critical function and/or proof of concept. At this level active research and development is initiated. Activities might include components that are not yet integrated or representative.

Level 2: Technology concept and/or application formulated. At this level invention begins. Once the basic principles are observed, practical applications can be invented. Activities are limited to analytical studies.

Level 1: Basic principles of concept are observed and reported. At this level scientific research begins to translated into applied research and development. Activities might include paper studies of a technology’s basic properties.

2 Public Works and Government Services Canada description of Technology Readiness Levels:

buyandsell.gc.ca/initiatives-and-programs/build-in-canada-innovation-program-bcip/program-specifics/technology-readiness-levels