



5G Network Technology and Related Pre-commercial 5G Program 2021 Value-for-Money Audit

Why we did this audit

- ENCQOR pre-commercial 5G program is funded by the province of Ontario to provide long term economic benefits through investment or job opportunities.
- Ontario has invested \$66.7 million to provide small- and medium-sized enterprises (SMEs) with access to a small-scale 5G network to develop 5G-related concepts, projects, and prototypes.

Why it matters

- The 5G network is poised to be a game-changer with the power to fuel innovation and transform the way we live. The network has the capability to connect a much larger number of devices in real-time.
- 5G is not fully commercially available yet but it is important for all levels of governments to work together to incorporate fundamental principles of data security and privacy, and should ensure that citizens' personal information is safeguarded.

What we found

Lack of Policies and Legislation for Emerging Technology

- Provincial policies and legislation for security and data privacy pre-dates emerging technologies like 5G in Ontario.
- The province has started preliminary work, including public consultations, in advance of updating relevant legislation, such as the *Freedom of Information and Protection of Privacy Act* (FIPPA).

RECOMMENDATION 1

Ineffective Monitoring of 5G Program

- The Ministry is not able to determine if the ENCQOR 5G Program has met its overall objective as it did not establish targets for half its performance metrics.
- The transfer payment agreement between the Economic Development Ministry and Ontario Centre of Innovation (OCI), appointed by the Ministry to administer and manage the 5G program, lacks clarity.
- Two critical job-creation outcomes for program participants, and the requirement to use the 5G test platform were not clearly established in the Agreement.

RECOMMENDATIONS 2-3

OCI's Delivery of the 5G Program Requires Improvement

- Approximately \$9.8 million was earmarked for ENCQOR 5G program participation.
- The OCI did not perform a comprehensive review of budgets submitted by program participants to ensure that only eligible expenditures are budgeted and approved, ultimately limiting the number of participants that could qualify for funding.
- SMEs were allocated very different amounts of funding for similar roles. Some SMEs allocated Ontario funds towards operational expenses such as Internet service, office rental and medical insurance.

RECOMMENDATIONS 4, 7

Test Platform Underutilized

- Of the \$66.7 million in provincial funding, 86% (\$56.9 million) was spent on researching, designing, building and operating the 5G test platform for the program.
- The test platform was significantly underutilized. The Agreement between the Ministry and OCI was unclear on which participants were required to use the test platform and OCI did not set the benchmark for the number of hours a SME should use the test platform.
- Some approved and funded projects did not require 5G technology.
- Access to the test platform was temporarily restricted for six months as a result of the COVID-19 pandemic.

RECOMMENDATIONS 5-6

Cybersecurity of Test Platforms Needs to be Strengthened

- A penetration test of the 5G test platform identified low-risk cybersecurity weaknesses that were remediated upon providing information to the technology vendors.
- Improvements to data deletion and IT incident processes have been recommended.

RECOMMENDATION 8

Lax Cybersecurity and IT Operations of OCI's IT Systems

- OCI's IT vendors did not perform cybersecurity scans, such as penetration testing, to identify and mitigate security vulnerabilities and weaknesses.
- OCI does not obtain and monitor service level reports to assess if its vendors are providing IT services according to the established agreement.

RECOMMENDATIONS 9, 10

Conclusions

- Our audit found that the Ministry is unable to measure the overall effectiveness of the 5G program because the Ministry did not establish targets for more than half of its nine performance metrics. As well, the agreement between the Ministry and OCI lacks clarity on key program outcomes such as job creation and usage of 5G test platforms.
- The province spent \$56.9 million to build and operate 5G test platforms that were significantly underused at the time of the audit. The agreement was also unclear on whether SMEs were required to use the 5G test platform for all program streams. OCI also did not verify if the test platforms were being used regularly, and the access to the test platform was restricted for approximately six months due to COVID-19 related access restraints.
- The province has commenced preliminary work to update relevant legislation such as the *Freedom of Information and Protection of Privacy Act* (FIPPA) to address data privacy and security risks associated with emerging technologies such as 5G.

Read the report at www.auditor.on.ca