



Employment and  
Social Development Canada

Emploi et  
Développement social Canada

Canada

# Canadian Occupational Projection System (COPS)

## *Summary of results*

Economic Policy Directorate (EPD)

Employment and Social Development Canada (ESDC)

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# Note to readers

- **Methodological changes:** *Previous COPS exercises were done using 293 occupational groupings, instead of the 485 of the 516 5-digit occupations that exist in the 2021 National Occupational Classification (NOC), as it is done in the current exercise. As a result, direct comparisons with previous COPS exercises are not suggested.*
- **Immigration targets:** *The COPS demographic and macroeconomic scenarios underlying the occupational projections were completed in the spring of 2024, at a time when the immigration targets were higher than what was announced in October 2024. As immigration volumes affects both labour demand and supply, the number of occupations expected to face shortage conditions over the **long-run** is not anticipated to change substantially from the current exercise.*



# Background – Canadian Occupational Projection System (COPS)

COPS is a suite of models developed by ESDC to project labour demand and labour supply. It identifies potential labour market shortage/surplus across approximately 485 of the 516 occupations (data was not reliable enough for 31 occupations) included in the 2021 National Occupational Classification System (NOC) at the national level for the 2024-2033 period.

The COPS process consists of three steps:

## Step 1: The assessment of recent labour market conditions (2021-2023)

The methodology relies on the analysis of about 30 labour market indicators (e.g. unemployment rate, employment growth, job vacancies growth and duration, proportion of overtime workers and EI recipients, etc.) by occupation. Imbalances (shortages or surplus) are identified when indicators diverge significantly from the average for all occupations and/or their own historical norm.

## Step 2: Projected flows of flow job openings and job seekers (2024-2033)

COPS projects the flows of new job openings (labour demand from job creation and replacement needs due to retirements, in-service deaths, or emigration) and new job seekers (labour market entrants from the school system, immigrants, re-entrants into the labour market, and workers switching occupation) over the projection period.

## Step 3: Future labour market conditions (by 2023)

Future labour market conditions are determined by combining Step 1 (recent labour market conditions) and Step 2 (projected flows of job seekers and job openings). Step 1 is used as a starting point, and Step 2 is used to assess whether the conditions identified in Step 1 will persist through or change during the projection period.



# NOC 2021 Training, Education, Experience and Responsibilities (TEER) classification

The current exercise uses the 2021 NOC, which is the most up-to-date version of the classification. It has 516 occupations that are classified based on their usual Training, Education, Experience and Responsibilities (TEER) as follows:

- **TEER 0:** Management occupations
- **TEER1:** Occupations usually requiring a university degree
- **TEER 2:** Occupations usually requiring a college diploma or apprenticeship of two or more years; or supervisory occupations
- **TEER 3:** Occupations usually requiring a college diploma or apprenticeship of less than two years; or more than six months of on-the-job training
- **TEER 4:** Occupations usually requiring a secondary school diploma; or several weeks of on-the-job training
- **TEER 5:** Occupations usually requiring short-term work demonstration and no formal education



## Step 1 - Recent Conditions 2021-2023: Key Findings

- During the first step, the assessment of recent conditions found **109 occupations showing strong or moderate signs of shortage** conditions and **12 showing strong or moderate signs of surplus** conditions over the period 2021-2023.
- **Shortage conditions** in recent years were largely concentrated in occupations related to **Health, and Trades, Transport and Equipment Operations**.
  - At the NOC TEER level, signs of shortages are concentrated in occupations requiring university education (TEER level 1) or college diploma or apprenticeship training (TEER level 2 and 3).
- The few **surplus conditions** were concentrated among occupations related to **art, culture, recreation and sport**.

The following tables present the lists of occupations that showed strong signs of shortage or surplus conditions over the period 2021-2023.



# Step 1: Recent Conditions 2021-2023: Occupations showing moderate or strong signs of shortage conditions

Broad occupational category	Occupations with their NOC code
Natural and applied sciences and related occupations	20011 Architecture and science managers; 21202 Urban and land use planners; 21220 Cybersecurity specialists; 21300 Civil engineers; 21301 Mechanical engineers; 21310 Electrical and electronics engineers; 21321 Industrial and manufacturing engineers; 21330 Mining engineers; <b>21331 Geological engineers</b> ; 22212 Drafting technologists and technicians; 22300 Civil engineering technologists and technicians; 22301 Mechanical engineering technologists and technicians; 22303 Construction estimators; 22310 Electrical and electronics engineering technologists and technicians; <b>22313 Aircraft instrument, electrical and avionics mechanics, technicians and inspectors</b>
Health	<b>31100 Specialists in clinical and laboratory medicine</b> ; <b>31101 Specialists in surgery</b> ; <b>31102 General practitioners and family physicians</b> ; <b>31103 Veterinarians</b> ; <b>31110 Dentists</b> ; <b>31111 Optometrists</b> ; <b>31112 Audiologists and speech-language pathologists</b> ; <b>31120 Pharmacists</b> ; <b>31121 Dietitians and nutritionists</b> ; <b>31200 Psychologists</b> ; 31201 Chiropractors; <b>31202 Physiotherapists</b> ; <b>31203 Occupational therapists</b> ; 31204 Kinesiologists and other professional occupations in therapy and assessment; 31209 Other professional occupations in health diagnosing and treating; <b>31300 Nursing coordinators and supervisors</b> ; <b>31301 Registered nurses and registered psychiatric nurses</b> ; <b>31302 Nurse practitioners</b> ; <b>31303 Physician assistants, midwives and allied health professionals</b> ; <b>32101 Licensed practical nurses</b> ; <b>32102 Paramedical occupations</b> ; <b>32103 Respiratory therapists, clinical perfusionists and cardiopulmonary technologists</b> ; <b>32104 Animal health technologists and veterinary technicians</b> ; <b>32109 Other technical occupations in therapy and assessment</b> ; <b>32111 Dental hygienists and dental therapists</b> ; <b>32120 Medical laboratory technologists</b> ; <b>32121 Medical radiation technologists</b> ; <b>32122 Medical sonographers</b> ; <b>32123 Cardiology technologists and electrophysiological diagnostic technologists</b> ; 32124 Pharmacy technicians; 32129 Other medical technologists and technicians; 32201 Massage therapists; <b>33101 Medical laboratory assistants and related technical occupations</b> ; <b>33102 Nurse aides, orderlies and patient service associates</b> ; 33103 Pharmacy technical assistants and pharmacy assistants;
Education, law and social, community and government services	41220 Secondary school teachers; 41221 Elementary school and kindergarten teachers; <b>41300 Social workers</b> ; 41301 Therapists in counselling and related specialized therapies; 42100 Police officers (except commissioned); 42101 Firefighters; 42201 Social and community service workers; 42202 Early childhood educators and assistants; 42203 Instructors of persons with disabilities; 43100 Elementary and secondary school teacher assistants; <b>44101 Home support workers, caregivers and related occupations</b>

Source: ESDC, COPS 2024 projections.

**Bold** : Occupations showing **strong** signs of shortage.



# Step 1: Recent Conditions 2021-2023: Occupations showing moderate or strong signs of shortage conditions

Broad occupational category	Occupations with their NOC code
Sales and service	62020 Food service supervisors; 63100 Insurance agents and brokers; 63200 Cooks; 63201 Butchers - retail and wholesale; 64401 Postal services representatives
Trades, transport and equipment operators and related occupations	72100 Machinists and machining and tooling inspectors; 72102 Sheet metal workers; 72104 Structural metal and platework fabricators and fitters; 72106 Welders and related machine operators; 72200 Electricians (except industrial and power system); 72201 Industrial electricians; 72300 Plumbers; 72302 Gas fitters; <b>72310 Carpenters</b> ; 72311 Cabinetmakers; 72320 Bricklayers; 72400 Construction millwrights and industrial mechanics; <b>72401 Heavy-duty equipment mechanics</b> ; <b>72402 Heating, refrigeration and air conditioning mechanics</b> ; 72404 Aircraft mechanics and aircraft inspectors; 72410 Automotive service technicians, truck and bus mechanics and mechanical repairers; 72411 Auto body collision, refinishing and glass technicians and damage repair estimators; <b>72422 Electrical mechanics</b> ; 72600 Air pilots, flight engineers and flying instructors; 72999 Other technical trades and related occupations; 73100 Concrete finishers; 73110 Roofers and shinglers; 73112 Painters and decorators (except interior decorators); 73113 Floor covering installers; 73300 Transport truck drivers; 73301 Bus drivers, subway operators and other transit operators; 75110 Construction trades helpers and labourers
Natural resources, agriculture and related production occupations	82021 Contractors and supervisors, oil and gas drilling and services; 83101 Oil and gas well drillers, servicers, testers and related workers; <b>84120 Specialized livestock workers and farm machinery operators</b> ; <b>85100 Livestock labourers</b> ; <b>85101 Harvesting labourers</b> ; <b>85103 Nursery and greenhouse labourers</b> ; 85110 Mine labourers; 85111 Oil and gas drilling, servicing and related labourers;
Occupations in manufacturing and utilities	94122 Paper converting machine operators; <b>94141 Industrial butchers and meat cutters, poultry preparers and related workers</b> ; <b>94142 Fish and seafood plant workers</b> ; 94203 Assemblers, fabricators and inspectors, industrial electrical motors and transformers; 95101 Labourers in metal fabrication; 95103 Labourers in wood, pulp and paper processing; 95106 Labourers in food and beverage processing; <b>95107 Labourers in fish and seafood processing</b>



Source: ESDC, COPS 2024 projections.

**Bold** : Occupations showing **strong** signs of shortage.



## Step 1: Recent Conditions 2021-2023: Occupations showing moderate or strong signs of surplus conditions

Broad occupational category	Occupations with their NOC code
Business, finance and administration	14111 Data entry clerks; 14301 Correspondence, publication and regulatory clerks
Natural and applied sciences and related occupations	22113 Conservation and fishery officers;
Occupations in art, culture, recreation and sport	50011 Managers - publishing, motion pictures, broadcasting and performing arts; 51112 Technical writers; 51120 Producers, directors, choreographers and related occupations; 52100 Library and public archive technicians; 52119 Other technical and coordinating occupations in motion pictures, broadcasting and the performing arts; 52120 Graphic designers and illustrators; <b>53111 Motion pictures, broadcasting, photography and performing arts assistants and operators;</b>
Sales and service	64322 Outdoor sport and recreational guides;
Trades, transport and equipment operators and related occupations	<b>75100 Longshore workers</b>



Source: ESDC, COPS 2024 projections.

**Bold** : Occupations showing **strong** signs of surplus.

## Step 2: 2024-2033 projection - Job openings and Job seekers

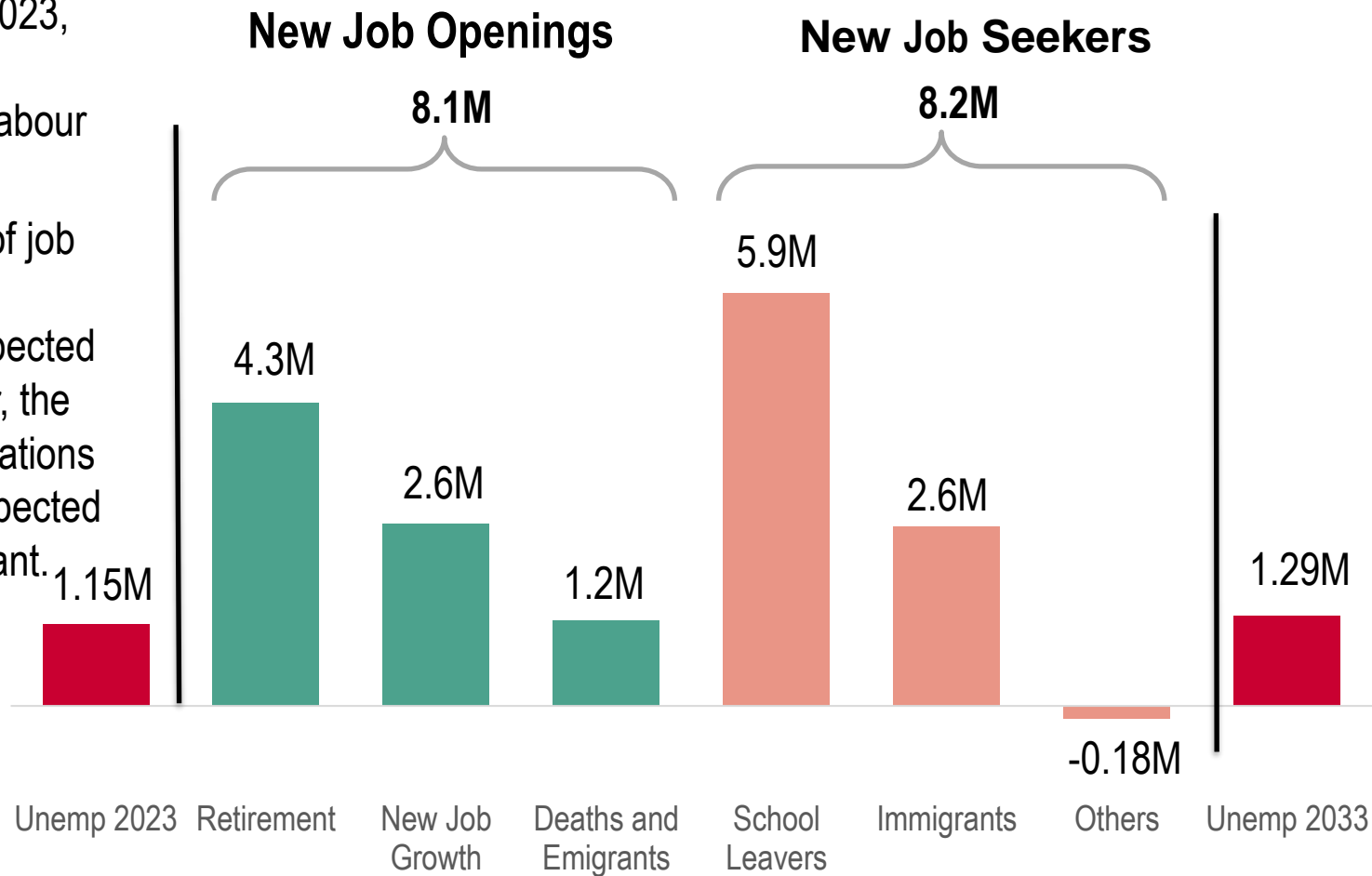
- **Job openings (new labour demand):** A total of 8.1 million job openings (from economic growth and replacement needs) are expected over the period 2024-2033:
  - About 2.6 million are projected to be new positions as a result of increasing economic activity (expansion demand or employment growth), while about 5.5 million are projected to be from replacing workers mainly due to retirements (4.3 million);
  - As a result, replacement demand (mainly from retirements) is expected to represent 68.1% of all projected job openings over the period 2024-2033; and
  - Three-quarters of all projected job openings are in occupations that usually require post-secondary education or in management occupations.
- **Job seekers (new labour supply):** A total of 8.2 million job seekers (from the school system, immigration and other sources) are projected to enter the labour market over the projection period. The increase in the number of immigrants' intake will lead to a higher contribution of job seekers. Still, school leavers will continue representing the main source of job seekers. Over the projection period:
  - School leavers are expected to contribute about 5.9 million new job seekers;
  - Immigrants will contribute about 2.6 million new job seekers;
  - About 180,000 non-working labour market participants will drop out the labour market.



# Step 2: 2024-2033 projection - Job openings and Job seekers

## Projected inflows and outflows of the labour market, 2024-2033

- Over 2022 and 2023, Canada had an historically tight labour market.
- As the volumes of job seekers and job openings are expected to be very similar, the number of occupations in shortage is expected to remain important.



# Step 3: 2024-2033 projection - Future conditions

Over 100 occupations are expected to have a moderate or strong risk of facing shortage conditions over the projection period:

- Most of these occupations were already showing signs of shortages over the 2021-2023 period (Step 1). For example, [Registered nurses and registered psychiatric nurses](#) will continue to face a strong risk of shortages over the projection period.
- 10 of the 109 that were showing signs of shortages over the 2021-2023 period (Step 1) are expected to return to more balanced labour markets over the long term. For example, after showing moderate signs of shortages post-pandemic, [Food service supervisors](#) are expected to return to balanced conditions over the 2024-2033 period.
- 4 new occupations are expected to face risks of shortages, with projected new job openings substantially outpacing projected new job seekers. For instance, [Home building and renovation managers](#) were found to be in relative balance over the period 2021-2023, but are expected to be at risk of facing shortages over the 2024-2033 projection period.
- Note that occupations with risks of facing shortage conditions over the projection period are concentrated in health; natural and applied sciences related occupations; as well as some in construction and transportation.

Finally, [17 occupations](#) were found to be at risk to face surpluses, mostly related to related to [art, culture, recreation and sport](#).

Users can find the list of occupations with risks of facing shortage or surplus conditions over the 2024-2033 period under in the following tables.



### Step 3: Detailed list of occupations expected to face risks of shortage conditions (2024-2033)

Broad occupational category	Occupations with their NOC code
Natural and applied sciences and related occupations	20011 Architecture and science managers; 21220 Cybersecurity specialists; 21300 Civil engineers; 21301 Mechanical engineers; 21310 Electrical and electronics engineers; 21321 Industrial and manufacturing engineers; 21331 Geological engineers; 22300 Civil engineering technologists and technicians; 22301 Mechanical engineering technologists and technicians; 22303 Construction estimators; 22310 Electrical and electronics engineering technologists and technicians; 22313 Aircraft instrument, electrical and avionics mechanics, technicians and inspectors
Health	<b>31100 Specialists in clinical and laboratory medicine; 31101 Specialists in surgery; 31102 General practitioners and family physicians; 31103 Veterinarians; 31110 Dentists; 31111 Optometrists; 31112 Audiologists and speech-language pathologists; 31120 Pharmacists; 31121 Dietitians and nutritionists; 31200 Psychologists; 31201 Chiropractors; 31202 Physiotherapists; 31203 Occupational therapists; 31209 Other professional occupations in health diagnosing and treating; 31300 Nursing coordinators and supervisors; 31301 Registered nurses and registered psychiatric nurses; 31302 Nurse practitioners; 31303 Physician assistants, midwives and allied health professionals; 32101 Licensed practical nurses; 32102 Paramedical occupations; 32103 Respiratory therapists, clinical perfusionists and cardiopulmonary technologists; 32104 Animal health technologists and veterinary technicians; 32109 Other technical occupations in therapy and assessment; 32111 Dental hygienists and dental therapists; 32120 Medical laboratory technologists; 32121 Medical radiation technologists; 32122 Medical sonographers; 32123 Cardiology technologists and electrophysiological diagnostic technologists; 32124 Pharmacy technicians; 32129 Other medical technologists and technicians; 32201 Massage therapists; 33101 Medical laboratory assistants and related technical occupations; 33102 Nurse aides, orderlies and patient service associates; 33103 Pharmacy technical assistants and pharmacy assistants</b>
Education, law and social, community and government services	41220 Secondary school teachers; 41221 Elementary school and kindergarten teachers; <b>41300 Social workers; 41301 Therapists in counselling and related specialized therapies; 42100 Police officers (except commissioned); 42101 Firefighters; 42201 Social and community service workers; 42202 Early childhood educators and assistants; 42203 Instructors of persons with disabilities; 43100 Elementary and secondary school teacher assistants; 44101 Home support workers, caregivers and related occupations</b>



## Step 3: Detailed list of occupations expected to face risks of shortage conditions (2024-2033)

Broad occupational category	Occupations with their NOC code
Sales and service	63100 Insurance agents and brokers; 63200 Cooks; 63201 Butchers - retail and wholesale; 64401 Postal services representatives
Trades, transport and equipment operators and related occupations	70010 Construction managers; 70011 Home building and renovation managers; 72100 Machinists and machining and tooling inspectors; 72102 Sheet metal workers; 72106 Welders and related machine operators; 72200 Electricians (except industrial and power system); 72201 Industrial electricians; 72300 Plumbers; 72302 Gas fitters; <b>72310 Carpenters</b> ; 72311 Cabinetmakers; 72320 Bricklayers; 72400 Construction millwrights and industrial mechanics; <b>72401 Heavy-duty equipment mechanics</b> ; <b>72402 Heating, refrigeration and air conditioning mechanics</b> ; 72404 Aircraft mechanics and aircraft inspectors; 72410 Automotive service technicians, truck and bus mechanics and mechanical repairers; 72422 Electrical mechanics; 72501 Water well drillers; <b>72600 Air pilots, flight engineers and flying instructors</b> ; 72999 Other technical trades and related occupations; 73100 Concrete finishers; 73110 Roofers and shinglers; 73112 Painters and decorators (except interior decorators); 73113 Floor covering installers; 73300 Transport truck drivers; 74201 Water transport deck and engine room crew; 75110 Construction trades helpers and labourers
Natural resources, agriculture and related production occupations	82021 Contractors and supervisors, oil and gas drilling and services; <b>84120 Specialized livestock workers and farm machinery operators</b> ; <b>85100 Livestock labourers</b> ; <b>85101 Harvesting labourers</b> ; 85103 Nursery and greenhouse labourers; 85110 Mine labourers
Occupations in manufacturing and utilities	<b>94122 Paper converting machine operators</b> ; <b>94141 Industrial butchers and meat cutters, poultry preparers and related workers</b> ; <b>94142 Fish and seafood plant workers</b> ; <b>94203 Assemblers, fabricators and inspectors, industrial electrical motors and transformers</b> ; 95101 Labourers in metal fabrication; 95103 Labourers in wood, pulp and paper processing; 95106 Labourers in food and beverage processing; <b>95107 Labourers in fish and seafood processing</b>



Source: ESDC, COPS 2024 projections

**Bold** : Occupations expected to face **strong** risks of shortage conditions (2024-2033).

## Step 3 - Detailed list of occupations expected to face risks of surplus conditions (2024-2033)

Broad occupational category	Occupations with their NOC code
Business, finance and administration	12113 Statistical officers and related research support occupations; 14111 Data entry clerks
Natural and applied sciences and related occupations	22113 Conservation and fishery officers; <b>22213 Land survey technologists and technicians; 22214 Technical occupations in geomatics and meteorology; 22222 Information systems testing technicians</b>
Occupations in art, culture, recreation and sport	50011 Managers - publishing, motion pictures, broadcasting and performing arts; 51120 Producers, directors, choreographers and related occupations; 52100 Library and public archive technicians; 52114 Announcers and other broadcasters; 52119 Other technical and coordinating occupations in motion pictures, broadcasting and the performing arts; <b>52120 Graphic designers and illustrators</b> ; 53100 Registrars, restorers, interpreters and other occupations related to museum and art galleries; <b>53111 Motion pictures, broadcasting, photography and performing arts assistants and operators; 53200 Athletes</b>
Trades, transport and equipment operators and related occupations	75100 Longshore workers
Natural resources, agriculture and related production occupations	<b>84111 Silviculture and forestry workers</b>



Source: ESDC, COPS 2024 projections

**Bold** : Occupations expected to face **strong** risks of surplus conditions (2024-2033).



# Annex



# Key assumptions underlying the occupational projections

## Population growth

Preliminary version of Statistics Canada's medium population growth projection scenario (March 2024)

## Immigration

- Aligned with IRCC 2023 target plans: 485,000 for 2024, and 500,000 for 2025 and 2026. This leads to a ratio of about 11.4 immigrants per 1,000 population that is maintained relatively constant over the projection period.

## Participation rates

- Projected by age, educational attainment level and gender: increasing, but at a slower pace
- Overall participation rate (15+): as participation drops with age, aging implies a decline in the overall participation rate

## Employment growth

- With the starting low unemployment rate, employment will essentially grow in line with labour force growth. Massive retirements of baby-boomers from the labour market will continue to generate job vacancies, which will facilitate job finding for any new unemployed individual, thereby maintaining the low unemployment rate.



# Key assumptions underlying the occupational projections

## Economic expansion

In line with projections from 2024 Federal Budget:

- Stable and low unemployment rate
- Slowdown in economic growth, but no recession expected in 2024
- Increase in the number of housing starts, but not large enough to eliminate the housing shortage
- Easing in monetary policy in the short-term, returning to neutral rate once inflation is back to target around 2024-2025

## Structural forces

- Population aging
- Automation – productivity gains
- Green transition - it assumes that Canada will reach the greenhouse gas reduction target; however, it also assumes that investment in carbon capture and storage technology alone will not be enough to reach the 2030 target and production cuts in some industries, most notably oil and gas extraction, will be necessary.

