



A Progress Report on Contracted Electricity Supply

First Quarter 2024

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Glossary of Acronyms

ABESA	Atikokan Biomass Energy Supply Agreement
ACES	Accelerated Clean Energy Supply Contract
ABPRIA	Amended and Restated Bruce Power Rehabilitation Implementation Agreement
BPRIA	Bruce Power Rehabilitation Implementation Agreement
CFC	Chaudière Falls Contract
CO	Commercial Operation
CES	Clean Energy Supply Contract
CHP	Combined Heat and Power (Cogeneration)
CHP (I, III)	Combined Heat and Power Agreement (Tranches 1 and 3)
CHPSOP	Combined Heat and Power Standard Offer Program
Dx	Distribution Grid Connection (LDC embedded)
EFW	Energy from Waste
ESFA	Energy Storage Facility Agreement (Phase 2)
EMCES	Early Mover Clean Energy Supply Contract
E-LT1	Expedited Long-Term Reliability Services Contract
FIT	Feed-in Tariff Program
GS	Generating Station
GEIA	Green Energy Investment Agreement Power Purchase
HCI	Hydroelectric Contract Initiative
HESA	Hydroelectric Energy Supply Agreement
HESOP	Hydroelectric Standard Offer Program
IESO	Independent Electricity System Operator
LESA	Lennox Energy Supply Agreement
LRP I	Large Renewable Procurement Program (Tranche 1)
microFIT	micro Feed-in Tariff Program
MCOD	Milestone Commercial Operation Date
MW	Megawatts
MTC 1	Medium Term Capacity Contract 1
NUG	Non-Utility Generator
NUGEDC	Non-Utility Generator Enhanced Dispatch Contract
NYRP	Northern York Region Peaking Generation Contract

OEFC	Ontario Electricity Financial Corporation
OND	Oneida Energy Storage Agreement
PPA	Power Purchase Agreement
RES (I-III)	Renewable Energy Supply Contract (Tranches 1, 2 and 3)
RESOP	Renewal Energy Standard Offer Program
Tx	Transmission Grid Connection
UD	Under Development

Background

The IESO has been inviting investment in generation technologies and facilities to supply new generation capacity over the two decades. This additional electricity has been procured through fixed term contracts with suppliers for renewable energy, clean energy (natural gas and nuclear energy) and energy produced from municipal waste. The Ministry of Energy determines the procurement levels for each fuel type based on its Long-Term Energy Plan. The IESO administers each contract that has been executed under the specific procurements, programs, or initiatives. The total amount of energy contracted by the IESO makes up a significant proportion of Ontario's electricity supply mix¹. Approximately 65% of Ontario's installed capacity is under contract to the IESO.

In keeping with the Ontario Energy Board Order EB-2005-0489 (March 3, 2006), the IESO posts regular updates on its website on the progress of procurement initiatives, including the progress of selected projects, subject to confidentiality constraints. The numbers and information provided in this report include only electricity projects and initiatives in Ontario contracted by the IESO.

The purpose of this report is to provide details about the IESO's contracted electricity supply capacity in the province of Ontario, Canada. The data in this report are limited to the capacities under contract to the IESO. The report does not include all Ontario Power Generation (OPG) regulated facilities,² facilities secured through capacity auctions, NUGs operating under contracts with the OEFC and market participants that sell energy on the open market and receive the hourly market price of electricity.

This report provides information about contracted capacities using the following categories:

1. Timelines.
2. Connection type.
3. Fuel type.
4. Contract type.
5. Procurement type.
6. Location.

Suppliers that have signed contracts with the IESO include, but are not limited to, private sector businesses, business partnerships, cooperatives, public sector organizations, municipal entities and governments, Indigenous communities, community groups, school boards, farmers, and homeowners. The generation facilities for many contracts are constructed specifically for the purpose of producing energy under these contracts. Some facilities, such as some hydroelectric plants, are legacy facilities built many decades ago but have only recently entered contracts with the IESO. Some existing facilities may undergo equipment upgrades, capacity expansions or refurbishment work to increase their generation capabilities. These incremental upgrades are reported as projects undergoing development. In programs, such as the Feed-in Tariff (FIT) Program and microFIT Program, existing structures (such as commercial buildings, farms, and homes) have been retrofitted with technology to produce renewable energy.

¹ See the [IESO Current Supply Mix](#) for more information.

² Ontario Power Generation Inc. (OPG) has contracts with the IESO, either directly or through a subsidiary, for some of its facilities. These facilities are: Upper and Lower Mattagami facilities, Portlands Energy Centre, Brighton Beach Power GS, Halton Hills GS, Atikokan GS, Healey Falls GS, Lac Seul GS and Lennox GS. See the [OPG website](#) for more information.

Parameters of Reported Contract Data

The data in this report are drawn from different types of electricity supply contracts held by the IESO.³ These data may differ from IESO supply mix data⁴, which track all grid-connected generation that has completed the market entry process and a small amount of embedded generation that participates in the IESO-administered market. Several important details about this report's data include:

- Contracted capacities are used in this report, not installed capacities.⁵
- In-service forecasts made in this report are based on the Milestone Commercial Operation Date (MCOD), which is a contractual date.
- Facilities reported as having achieved commercial operation have fulfilled their required contractual obligations to begin generating electricity. However, when the supplier is also a registered IESO market participant, it is listed as a new facility in operation when it has completed commissioning and the market registration process.⁶

Confidentiality Constraints

The IESO is legally bound by confidentiality terms that differ between contracts, therefore the types of data that can be shared are not always the same.

Assumptions and Caveats

1. Contract data may change as frequently as daily. The data used to construct this report are based on the information as of the end of the specified quarter.
2. In some cases, mostly with hydroelectric projects, there are expansions to facilities that are already in commercial operation. These expansion projects that are under development are counted as part of the original contract to avoid double counting of the total number of contracts.
3. The number of contracts does not always represent the number of physical facilities. In some cases, a single contract may include multiple generating facilities.
4. Contracts executed with non-utility generators (NUGs) that are under contract with the Ontario Electricity Financial Corporation (OEFC) may not be reported as an IESO contract until:
 - a. The IESO contract term has commenced.
 - b. All conditions required for commercial operation approval have been satisfied.

³ The data reflects the contractual obligations of the IESO which continue until contracts have ended.

⁴ The [supply mix](#) data are based on the [IESO-18 Month Outlook](#) which has different purpose and use data models.

⁵ Installed capacity refers to the maximum power that a generation facility can supply, in MW. Contracted capacity is the amount of power that the IESO has agreed to purchase from suppliers under contract for a fixed term. Contract capacities are sometimes different from installed capacities. Therefore, data in the IESO 18-Month Outlook and [Generator Output and Capability Report](#) may reflect capacity values that are different from data in this report.

⁶ Generators registered as Market Participants are required to comply with obligations relating to connection to the IESO-controlled grid and to participation in the IESO-administered markets. For more information, see the [IESO Market Rules – Chapter 4: Grid Connection Requirements](#).

5. The data in this report include all embedded generation under contract with the IESO. The IESO Current Supply Mix data do not include all embedded generation, as embedded generators generally do not participate in the IESO-administered market.
6. Some numbers are rounded and may not add up to the totals quoted in the text.

Maps

- All maps in this report are used for illustrative purposes only.
- All locations are approximate or maybe estimated.
- The sizes of map pins are not to scale.

Additional Resources

For more information about IESO's electricity supply contracts and programs see the following pages on the IESO website:

1. [microFIT Program Archive](#): Provides a description of the microFIT program and supporting documents including:
 - Contracts
 - Program Rules
 - Price Schedules
 - Prescribed Forms
2. [Feed-in Tariff \(FIT\) Program Archive](#): Provides descriptions of FIT programs and supporting documents including:
 - Contracts
 - Standard Definitions
 - Program Rules
 - Price Schedules
3. [IESO Electricity Resource Contracts](#): Provides descriptions of the different procurement and supporting documents including:
 - Contracts
 - Requests for Proposals (RFPs)
 - Program Rules
4. [IESO Active Generation Contract List](#): A Microsoft Excel spreadsheet containing individual contract data for currently active electricity supply projects.
5. [Regional Planning Zones](#): Provides information about Ontario's 21 regional planning zones used by the IESO to assess zonal electricity needs.
6. [Reliability Outlook](#): Provides information on Ontario's demand forecast and associated drivers, resource adequacy projections.

Overview

This report summarizes the cumulative contract data as at the end of the first quarter of 2024 and changes occurring within that quarter. At the end of the quarter, the IESO was managing 33,493 contracts, which have a combined capacity of 28,736 MW. This capacity was spread across eight fuel types as shown in Figure 1. The total amount of contracted capacity in commercial operation was 26,976 MW, while 1,760 MW remained under development.

Figure 1: Total Contracted Capacity by Fuel Type

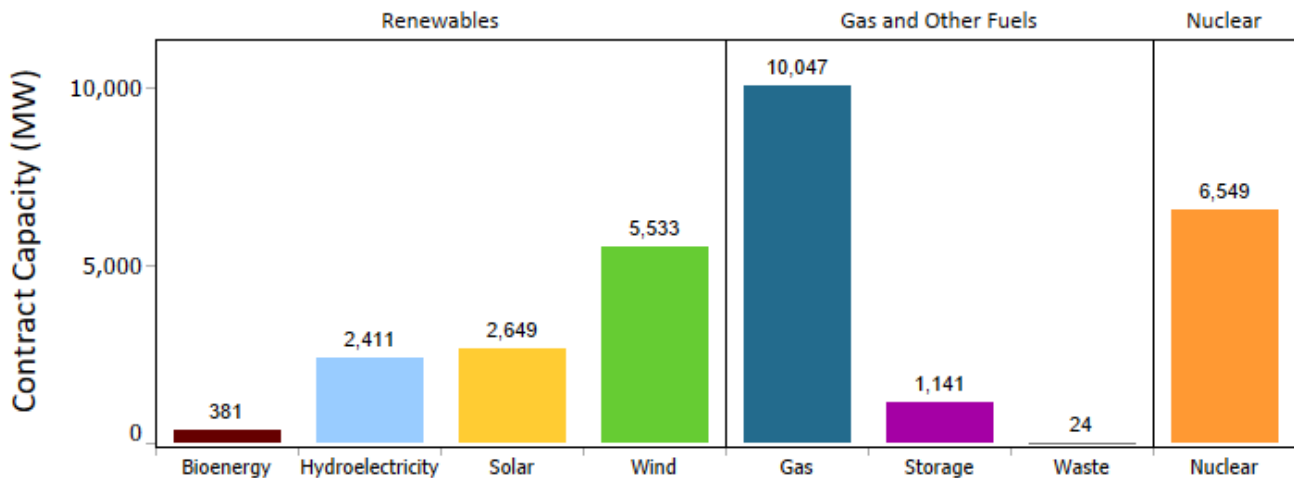
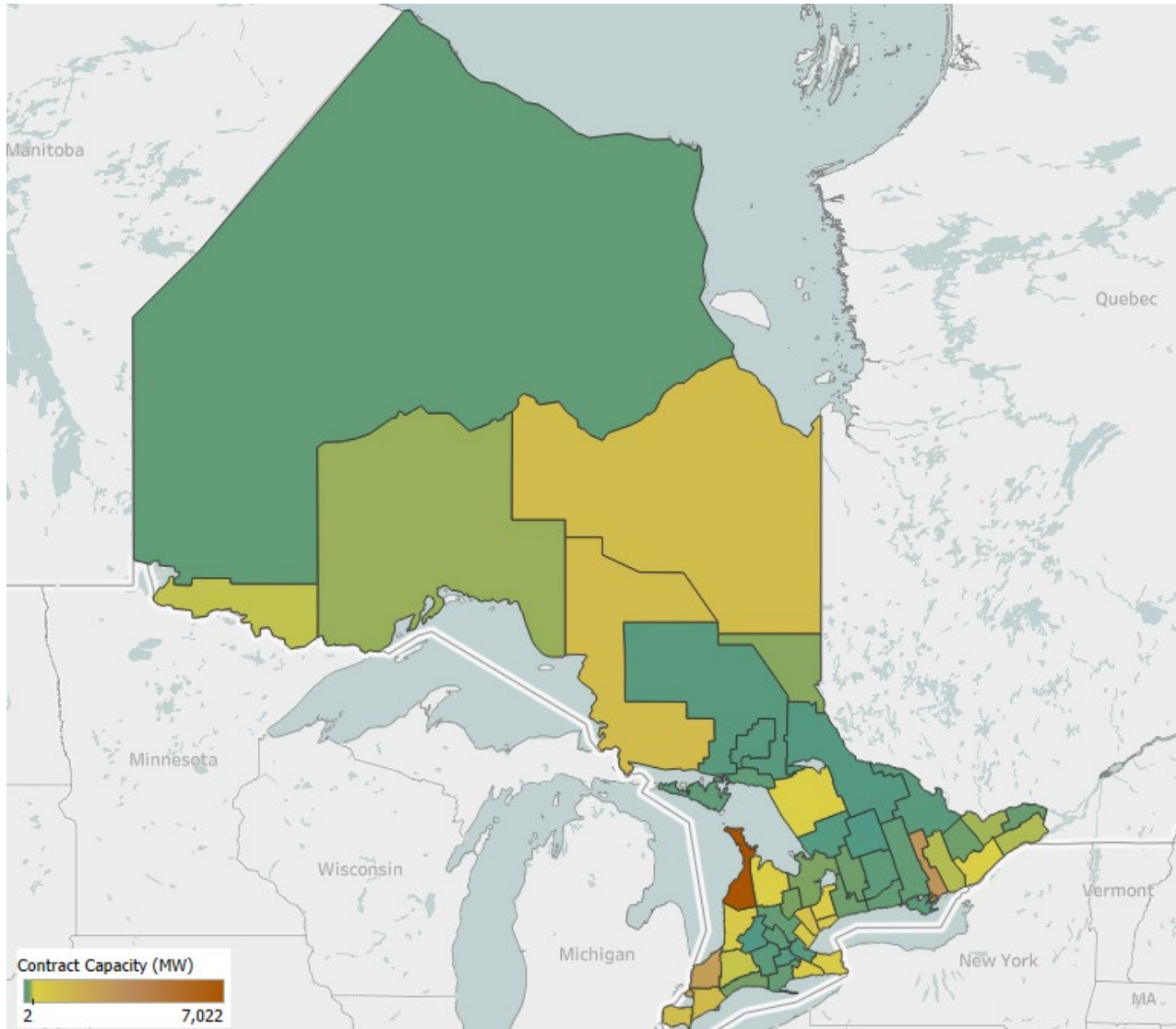


Table 1 below provides a summary of the cumulative contracted capacity and numbers of contracts by fuel type and project status. See the [IESO Active Contracts Generation List](#) for site specific data for currently active electricity supply projects (excluding microFIT).

Table 1: Contracted Capacities by Fuel and Contract Status

Categories		UD			CO			Grand Total		
Fuel Group	Fuel Category	No. of Contracts	Contract Capacity (MW)	% Contract Capacity	No. of Contracts	Contract Capacity (MW)	% Contract Capacity	No. of Contracts	Contract Capacity (MW)	% Contract Capacity
Renewables	Bioenergy	1	4.0	0.0%	77	377.1	1.3%	78	381.1	1.3%
	Hydroelectricity				100	2,411.5	8.4%	100	2,411.5	8.4%
	Solar				33,133	2,648.5	9.2%	33,133	2,648.5	9.2%
	Wind				111	5,533.1	19.3%	111	5,533.1	19.3%
	Total	1	4.0	0.0%	33,421	10,970.1	38.2%	33,422	10,974.1	38.2%
Gas and Other Fuels	Gas	10	623.91	2.2%	44	9,423.3	32.8%	47	10,047.2	35.0%
	Storage	16	1131.716	3.9%	5	9.8	0.0%	21	1,141.5	4.0%
	Waste				2	24.2	0.1%	2	24.2	0.1%
	Total	26	1755.626	6.1%	51	9,457.3	32.9%	70	11,212.9	39.0%
Nuclear	Uranium				1	6,549.0	22.8%	1	6,549.0	22.8%
	Total				1	6,549.0	22.8%	1	6,549.0	22.8%
Grand Total		27	1,759.6	6.1%	33,473	26,976.4	93.9%	33,493	28,736.0	100.0%

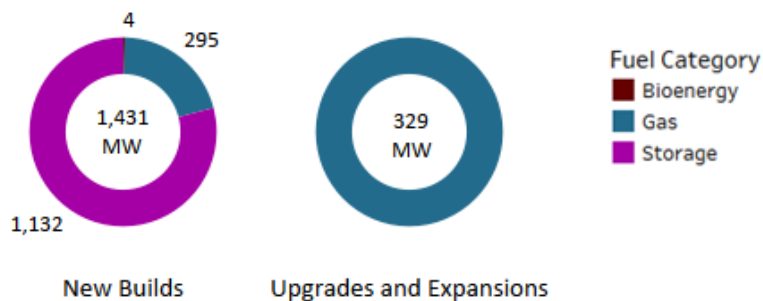
Figure 2: Heat Map of Total In-Service Contracted Capacities in Ontario Census Divisions



Projects Under Development

Contracts under-development include new builds and, upgrades and expansion to existing facilities.

Figure 3: Capacities Under Development by Fuel Type



Re-Contracted Contracts

As some contracts approach their term end dates, the IESO may seek to secure new terms with some Suppliers. These new contracts may be in the form of bilateral negotiations, standard offer programs, or competitive procurements. When facilities are re-contracted, the contracted capacities can be lower than the capacities in the expiring or original contract. The new contract term dates may be sequential or there could be a gap in between the two contracts. Recently re-contracted facilities and noted below and illustrated in Figure 4:

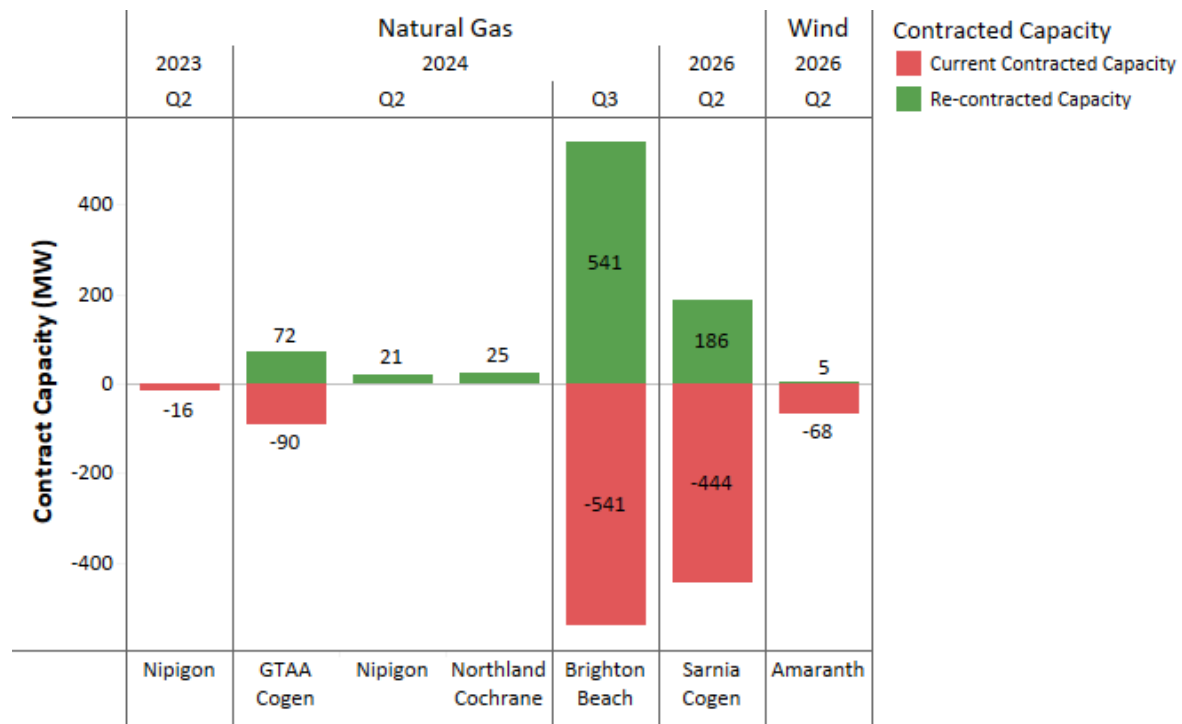
Bilateral negotiations⁷:

- Lennox GS (renewed for 6.6 years)
- Thunder Bay Condensing Turbine Project (renewed for 5 years)
- Chapleau Cogeneration Facility (renewed for 8 years)
- Brighton Beach GS (renewed for 10 years)

Competitive procurements (MTC 1 Contracts - renewed for 5 years):

- GTAA Cogeneration Plant
- Northland Cochrane CGS (formerly a NUG under contract to the OFEC)
- Nipigon Power Plant
- Sarnia Cogeneration Plant
- Amaranth WGS (formerly Melancthon I)

Figure 4: Outlook for Upcoming Re-contracted Capacities by Facility



⁷ Lennox GS, Thunder Bay Condensing Turbine Project, and Chapleau Cogeneration Facility have already commenced the new terms and are not included in Figure 4.

IESO Contracts and Contract Capacity

Table 2: Number of Contracts and Contract Capacity

Categories			No. of Contracts		Contract Capacity (MW)		No. of Contracts	Contract Capacity (MW)	% Capacity	
Fuel Group	Fuel Category	Contract Type	UD	CO	UD	CO	Total	Total	Total	
Renewables	Bioenergy	ABESA		1		205.0	1	205.0	0.7%	
		CHP		2		48.0	2	48.0	0.2%	
		FIT		52		49.8	52	49.8	0.2%	
		microFIT		1		0.01	1	0.0	0.0%	
		NUG		2		29.0	2	29.0	0.1%	
		PPA	1		4.0		1	4.0	0.0%	
		RES		3		9.3	3	9.3	0.0%	
		RESOP		16		36.0	16	36.0	0.1%	
	Total	1	77	4.0	377.1	78	381.1	1.3%		
	Hydroelectricity	CFC		2		39.0	2	39.0	0.1%	
		FIT		12		69.0	12	69.0	0.2%	
		HCI		58		1,128.3	58	1,128.3	3.9%	
		HESA		5		1,062.6	5	1,062.6	3.7%	
		HESOP		4		37.4	4	37.4	0.1%	
		RES		3		47.0	3	47.0	0.2%	
		RESOP		16		28.2	16	28.2	0.1%	
		Total		100		2,411.5	100	2,411.5	8.4%	
	Solar	FIT		3,080		1,496.8	3,080	1,496.8	5.2%	
		GEIA		4		300.0	4	300.0	1.0%	
		LRP		4		120.0	4	120.0	0.4%	
		microFIT		29,971		257.9	29,971	257.9	0.9%	
		RESOP		74		473.8	74	473.8	1.6%	
		Total		33,133		2,648.5	33,133	2,648.5	9.2%	
	Wind	FIT		51		2,511.6	51	2,511.6	8.7%	
		GEIA		6		1,067.5	6	1,067.5	3.7%	
		LRP		2		159.8	2	159.8	0.6%	
		microFIT		3		0.0	3	0.0	0.0%	
		RES		15		1,509.4	15	1,509.4	5.3%	
		RESOP		34		284.8	34	284.8	1.0%	
	Total		111		5,533.1	111	5,533.1	19.3%		
	Total		1	33,421	4.0	10,970.1	33,422	10,974.1	38.2%	
	Gas and Other Fuels	Gas	ACES	3	3	121.91	2,030.6	3	2,152.5	7.5%
			CES	2	5	103.5	2,886.0	5	2,989.5	10.4%
CHP			1	7	23	419.2	7	442.2	1.5%	
CHPSOP				15		79.4	15	79.4	0.3%	
E-LT1			2		295		2	295.0	1.0%	
EMCES			1	4	42.5	997.0	5	1,039.5	3.6%	
LESA				1		2,000.0	1	2,000.0	7.0%	
NUG				7		537.2	7	537.2	1.9%	
NUGEDC				1		81.0	1	81.0	0.3%	
NYRP			1	1	38	393.0	1	431.0	1.5%	
Total		10	44	623.91	9,423.3	47	10,047.2	35.0%		
Storage		E-LT1	15		881.716		15	881.7	3.1%	
		ESFA		5		9.8	5	9.8	0.0%	
		OND	1		250		1	250.0	0.9%	
		Total	16	5	1131.716	9.8	21	1,141.5	4.0%	
Waste		EFW		1		13.9	1	13.9	0.0%	
		NUG		1		10.3	1	10.3	0.0%	
		Total		2		24.2	2	24.2	0.1%	
Total			26	51	1755.626	9,457.3	70	11,212.9	39.0%	
Nuclear		Uranium	ABPRIA		1		6,549.0	1	6,549.0	22.8%
			Total		1		6,549.0	1	6,549.0	22.8%
		Total		1		6,549.0	1	6,549.0	22.8%	
Grand Total			27	33,473	1,759.6	26,976.4	33,493	28,736.0	100.0%	

Changes to Contracts in Q1-2024

See Table 3 for a detailed account of the changes⁸ that occurred during the quarter. This table illustrates the difference between the current quarter over the previous quarter. These differences or deltas are noted at the contract program level.

The main changes in contracted capacity and contract volumes to note are⁹:

1. Capacity Changes

- Total net contracted capacity decreased by 0.1 MW. This included the following:
 - 0.1 MW decrease in solar energy.

2. Changes in the Number of Contracts

- The total net number of contracts managed decreased by 14.

3. Large Facilities Achieving Contractual Commercial Operation^{10 11}

- None.

⁸ Changes are net of: terminations, capacity amendments (reductions, upgrades and expansions) and new contracts.

⁹ Numbers are rounded and may not add up to the totals quoted in the text. These changes reflect the differences between the numbers report in this report and the previous quarter. Changes to contract capacity may have actually occurred in a prior quarter.

¹⁰ Facilities that have achieved commercial operation have fulfilled the contractual obligations required to operate under their IESO contracts and receive the contract price. Until then, facilities that are grid-connected and that have completed the market participant registration and physical commissioning process can offer energy into the market at the Hourly Ontario Energy Price (HOEP). The review and final authorization of commissioning documentation can be a lengthy process and may result in the contractual status trailing the actual operational status of the facility. In such cases the contractual commercial operation date will be backdated after contractual due diligence is completed.

¹¹ Suppliers must register with the IESO if they are participating in the IESO-administered markets or programs, or if connecting a physical facility to the IESO-controlled grid. Market registration is a separate process from commissioning and in some cases may be completed after the contractual commercial operation date has occurred. See [Market Registration](#) for more information. Consult the [New and Retired Generation Since the IESO Market Opened in May 2002](#) list and the [18-Month Outlook – Section 2.2: Updates to Resources](#) to determine whether generators registered as Market Participants have completed the IESO market registration process.

Table 3: Net Changes in Contracts in Q1-2024

Categories			Number of Contracts			Contracted Capacity (MW)			
Fuel Group	Fuel Category	Contract Type	UD	CO	Total	UD	CO	Total	
Renewables	Bioenergy	ABESA							
		CHP							
		FIT							
		microFIT							
		NUG							
		PPA							
		RES							
		RESOP							
		Total							
	Hydroelectricity	CFC							
		FIT							
		HCI							
		HESA							
		HESOP							
		RES							
		RESOP							
		Total							
	Solar	FIT							
		GEIA							
		LRP							
		microFIT			-14	-14		-0.1	-0.1
		RESOP							
		Total			-14	-14		-0.1	-0.1
	Wind	FIT							
		GEIA							
		LRP							
		microFIT							
RES									
RESOP									
Total									
Total				-14	-14		-0.1	-0.1	
Gas and Other Fuels	Gas	ACES							
		CES							
		CHP							
		CHPSOP							
		E-LT1							
		EMCES							
		LESA							
		NUG							
		NUGEDC							
		NYRP							
		Total							
	Storage	E-LT1							
		ESFA							
		OND							
		Total							
	Waste	EFW							
		NUG							
		Total							
	Total								
Nuclear	Uranium	ABPRIA							
		Total							
	Total								
Grand Total				-14	-14		-0.1	-0.1	

Timelines

The first agreements for contracted capacity were executed in 2004. These procurements began with competitive offers and bi-lateral negotiations, and subsequently, standard offer programs were introduced. The timeline of programs and procurements executed from ministerial directives includes:

- 2004 - RES I
- 2005 - BPRIA, ACES, RES II, EMCES
- 2006 - RESOP
- 2007 - HESA, RES III
- 2008 - CHP I, NYRP
- 2009 - CHP III, HCI, FIT 1 and microFIT
- 2010 - ABESA, CHPSOP
- 2011 - microFIT, GEIA
- 2012 - FIT 2/microFIT program review, LESA
- 2013 - HESOP, NUG
- 2014 - TBESA, FIT 3
- 2015 - STOR 2
- 2016 - ABPRIA, CFC, LRP I, FIT 4
- 2017 - FIT 5, NUGEDC
- 2019 - PPA
- 2022 - OND, MTC 1
- 2023 - E-LT1

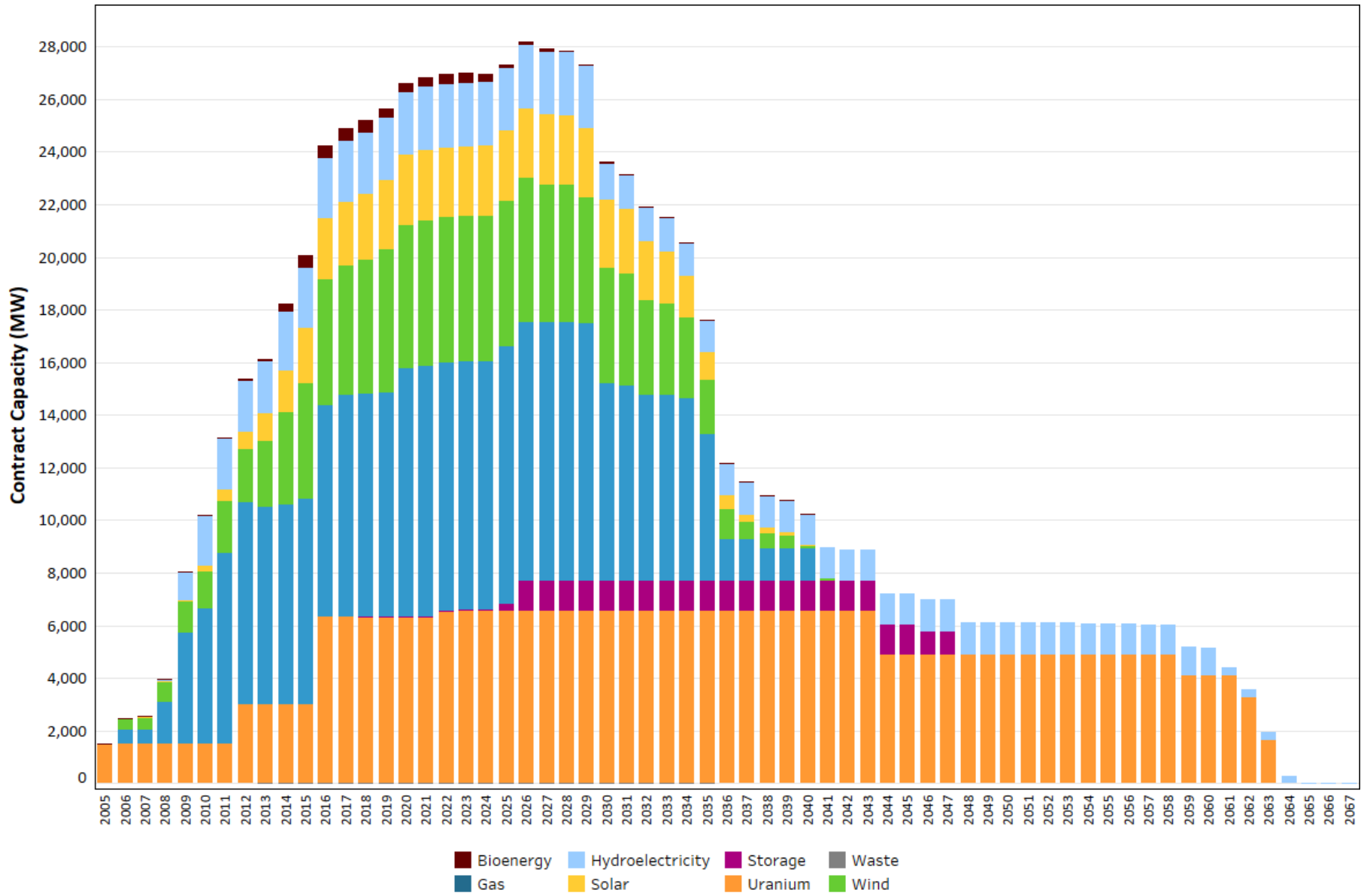
Contracts Lifecycle

Figure 5 illustrates the projected lifecycle of total contract capacities by applying the contract term lengths to the actual commercial operation dates and expected MCODs of the facilities.¹² The resulting graph shows how contracted capacity is expected to increase and decrease over the life of the contracts as facilities achieve commercial operation, contracts expire at the end of their terms, facilities are re-contracted, contracts are extended and new contracts are added.¹³

¹² Where the MCOD has passed and the project is not in commercial operation, the estimated commercial operation date is considered as being in the current year (for estimation purposes only).

¹³ Annual capacity amounts are not prorated for years when the in-service capacity is only for a partial year.

Figure 5: Projected Lifecycle for Contracted Capacity by Year



Capacity by Grid Connection

This section summarizes the connection configuration of contracted generating facilities to the electrical grid. Contracted generating facilities are:

1. Connected directly to the IESO-administered transmission grid (Tx).¹⁴
2. Embedded within the distribution network of local distribution companies (Dx).¹⁵
Embedded generators supply electricity to local distribution systems, helping to offset demand on the grid by supporting some of the needs of local communities.
3. Remotely located communities that are isolated from, and not connected to the Ontario bulk electric system.

Generally, large capacity projects are connected to transmission grid and are dispatched by the IESO. Smaller capacity projects are usually connected to distribution networks. However, there are exceptions to both rules.

Table 4: Connection Type by Fuel

Categories		UD		CO		Grand Total	
Connection	Fuel Category	No. of Contracts	Contract Capacity (MW)	No. of Contracts	Contract Capacity (MW)	No. of Contracts	Contract Capacity (MW)
Dx	Bioenergy			74	108.1	74	108.1
	Gas			24	320.4	24	320.4
	Hydroelectricity			87	333.0	87	333.0
	Solar			33,119	2,170.5	33,119	2,170.5
	Storage	10	109.2	5	9.8	15	119.0
	Waste			2	24.2	2	24.2
	Wind			64	590.5	64	590.5
	Total	10	109.2	33,375	3,556.4	33,385	3,665.6
Tx	Bioenergy			3	269.0	3	269.0
	Gas	10	623.9	20	9,102.9	23	9,726.8
	Hydroelectricity			13	2,078.4	13	2,078.4
	Nuclear			1	6,549.0	1	6,549.0
	Solar			14	478.0	14	478.0
	Storage	6	1,022.5			6	1,022.5
	Wind			47	4,942.6	47	4,942.6
	Total	16	1,646.4	98	23,420.0	107	25,066.4
Off-grid	Bioenergy	1	4.0			1	4.0
	Total	1	4.0			1	4.0
Grand Total		27	1,759.6	33,473	26,976.4	33,493	28,736.0

¹⁴ All assets, regardless of size, that are connected to the transmission grid are included in transmission data.

¹⁵ The embedded contracted capacity shown here are not included in the IESO supply mix data estimate unless the supplier participates in the IESO-administered market. See [Transmission-Connected Generation](#).

Table 5: Annual In-service Contracted Capacities by Fuel and Connection Type¹⁶

Year	Distribution Network Connected (MW)							Transmission Grid Connected (MW)					
	Bioenergy	Gas	Solar	Storage	Waste	Hydro	Wind	Bioenergy	Gas	Solar	Uranium	Hydro	Wind
2005	2					8					1,500		
2006	3	108				8			444		1,500		395
2007	29	108	0			15	7		444		1,500		471
2008	33	139	10			20	74		1,449		1,500	23	704
2009	33	202	40			30	101		4,040		1,500	1,032	1,084
2010	52	202	195			183	201		4,923		1,500	1,720	1,233
2011	58	202	432			190	241		7,063		1,500	1,720	1,724
2012	64	202	662			191	325		7,456		3,000	1,738	1,724
2013	72	205	1,038		3	232	336	40	7,316		3,000	1,738	2,151
2014	88	208	1,530		3	234	425	245	7,390	40	3,000	2,006	3,064
2015	108	213	1,857		24	244	488	380	7,576	280	3,000	2,006	3,880
2016	109	259	1,952		24	240	572	380	7,771	380	6,300	2,024	4,210
2017	109	271	2,039		24	275	591	380	8,171	380	6,300	2,062	4,310
2018	110	271	2,116	4	24	275	591	380	8,207	380	6,300	2,062	4,483
2019	112	276	2,165	8	24	283	591	245	8,207	478	6,300	2,078	4,843
2020	110	327	2,171	10	24	307	590	245	9,107	478	6,300	2,078	4,843
2021	110	320	2,172	10	24	333	590	245	9,188	478	6,300	2,078	4,943
2022	110	320	2,172	10	24	333	590	269	9,103	478	6,500	2,078	4,943
2023	110	320	2,171	10	24	333	590	269	9,103	478	6,549	2,078	4,943

¹⁶ The data in this table can be used to reconstruct the historical data in histogram shown in Figure 5.

Capacity by Procurement

The procurement methodologies used to acquire contracted capacities are standard offer, bi-lateral negotiations, or competitive bids. Table 6 provides a summary of the current total capacities contracted by the different procurement methods.

Table 6: Capacities by Procurement

Categories			UD		CO		Grand Total		
Procurement Type	Fuel Group	Contract Type	No. of Contracts	Contract Capacity (MW)	No. of Contracts	Contract Capacity (MW)	No. of Contracts	Contract Capacity (MW)	
Bi-lateral Negotiation	Renewables	ABESA			1	205.0	1	205.0	
		CFC			2	39.0	2	39.0	
		GEIA			10	1,367.5	10	1,367.5	
		HCI			3	980.0	3	980.0	
		HESA			5	1,062.6	5	1,062.6	
		NUG			2	29.0	2	29.0	
		PPA	1	4.0			1	4.0	
	Gas and Other Fuels	ACES				2	1,389.1	2	1,389.1
		EMCES	1	42.5		4	997.0	5	1,039.5
		LESA				1	2,000.0	1	2,000.0
		NUG				8	547.5	8	547.5
		NUGEDC				1	81.0	1	81.0
		OND	1	250				1	250.0
	Nuclear	ABPRIA				1	6,549.0	1	6,549.0
Total			3	296.5	40	15,246.7	43	15,543.2	
Competitive	Renewables	CHP			2	48.0	2	48.0	
		LRP			6	279.8	6	279.8	
		RES			21	1,565.7	21	1,565.7	
	Gas and Other Fuels	ACES	3	121.91		1	641.5	3	763.4
		CES	2	103.5		5	2,886.0	5	2,989.5
		CHP	1	23		7	419.2	7	442.2
		CHPSOP				15	79.4	15	79.4
		E-LT1	17	1176.716				17	1,176.7
		EFW				1	13.9	1	13.9
		ESFA				5	9.8	5	9.8
		NYRP	1	38		1	393.0	1	431.0
Total			24	1463.126	64	6,336.2	83	7,799.3	
Standard Offer	Renewables	FIT			3,195	4,127.1	3,195	4,127.1	
		HCI			55	148.3	55	148.3	
		HESOP			4	37.4	4	37.4	
		microFIT			29,975	258.0	29,975	258.0	
		RESOP			140	822.8	140	822.8	
Total					33,369	5,393.5	33,369	5,393.5	
Grand Total			27	1,759.6	33,473	26,976.4	33,493	28,736.0	

Facility Locations

The locations of supply facilities involve several factors that must be balanced. These include proximity to demand centers, fuel supply constraints, environmental and community impact, ability to connect to the electricity grid and government regulations. The Bruce Nuclear Power Plant in Tiverton is located next to Lake Huron with provides water for cooling the plant's reactors. Natural gas facilities are situated near major demand centers, major and arterial gas supply pipelines that tap into the US gas basins. Wind farms are installed in areas with consistent wind patterns such as coastal regions and open plains, while solar facilities thrive in regions with favorable sunlight exposure as found in Southern Ontario. Hydroelectric facilities are historically situated near major rivers and waterfalls, taking advantage of natural hydraulic features, while bioenergy facilities are located near agricultural areas for biomass supply. Battery storage facilities which are important for balancing supply and demand, are positioned near demand centers and grid infrastructures to act as both loads and generators. The few municipal waste facilities in Ontario are located at municipal and commercial waste processing sites.

Figure 6 and Figure 7 shows illustrates the location of contracted facilities within Ontario's 21 electricity planning zone. Each planning zone undergoes a five-year regional planning cycle. Regional planning looks at the electricity needs of each region, considering energy conservation, electricity generation, distribution infrastructure and innovation to meet those needs.

Figure 6: Map of In-service, Non-Solar Facilities in Ontario's 21 Regional Planning

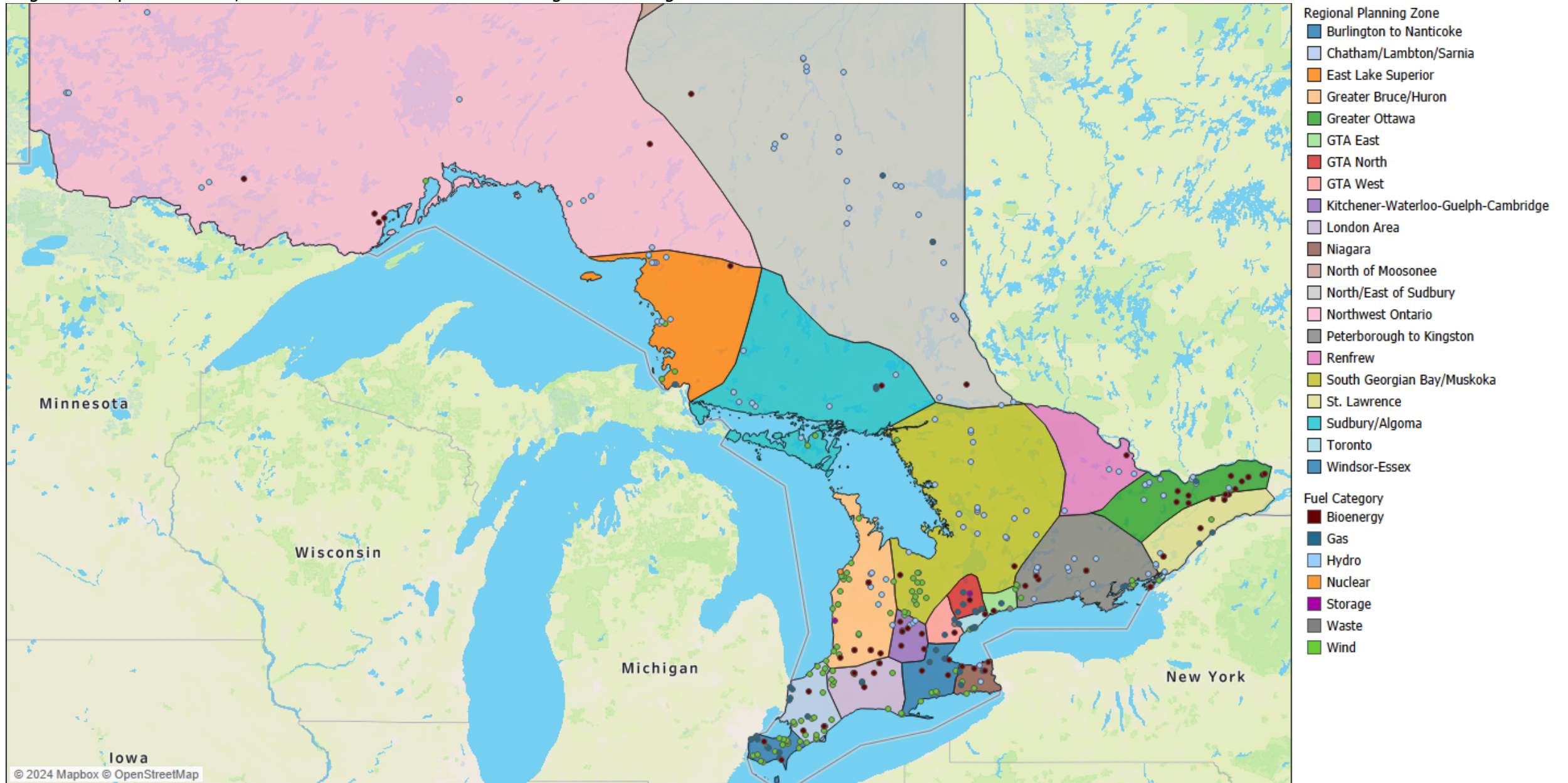
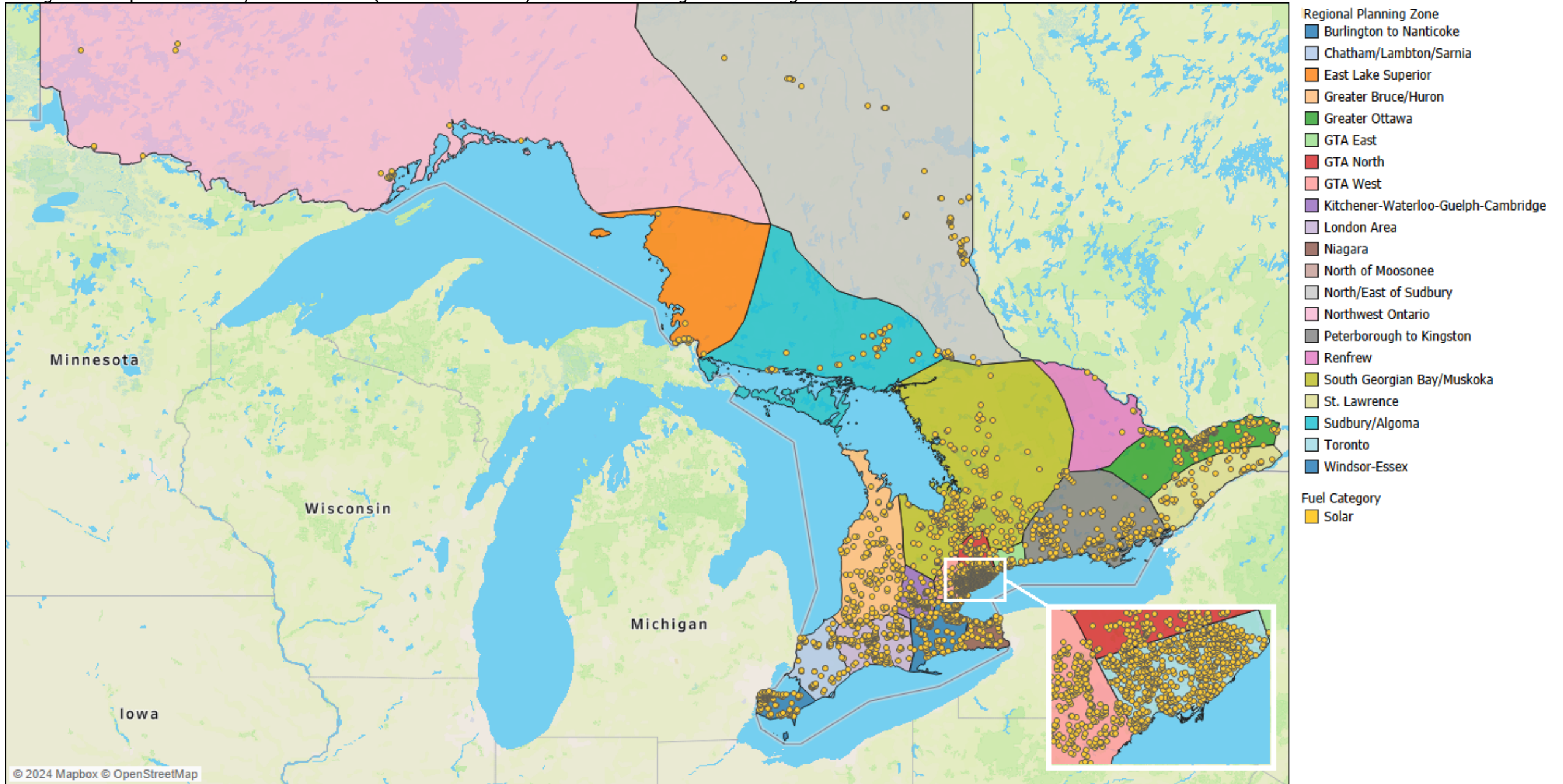


Figure 7: Map of In-service, Solar Facilities (excludes microFIT) in Ontario's 21 Regional Planning



microFIT Program

The micro Feed-in Tariff Program (microFIT) was launched in 2009 and the application window for new microFIT contracts was closed in December 2017. Projects under the microFIT program have contracted capacities of 10 kilowatts or less. The program attracted many homeowners, small businesses, and farms. The total number of these projects account for over 85% of all IESO contracts. All microFIT contracts are for renewable energy. Table 7 below shows that virtually all microFIT contracts are either ground-mounted or rooftop-mounted solar mounted projects.

Table 7: Number of microFIT Contracts and Capacity by Fuel Type

Fuel Category	No. of Contracts	Contract Capacity (MW)
Bioenergy	1	0.01
Solar	29,971	257.94
Wind	3	0.01
Grand Total	29,975	257.97

The number of contracts executed annually has varied with the different contract prices offered for contract versions. Figure 8 below illustrates the number of microFIT contracts executed at each price level along with the growth in microFIT capacity until the program ended. Figure 9 illustrates the geographic distribution of microFIT contracts within Ontario census divisions.

Figure 8: microFIT Contracts by Price and Capacity Growth Until End of Program

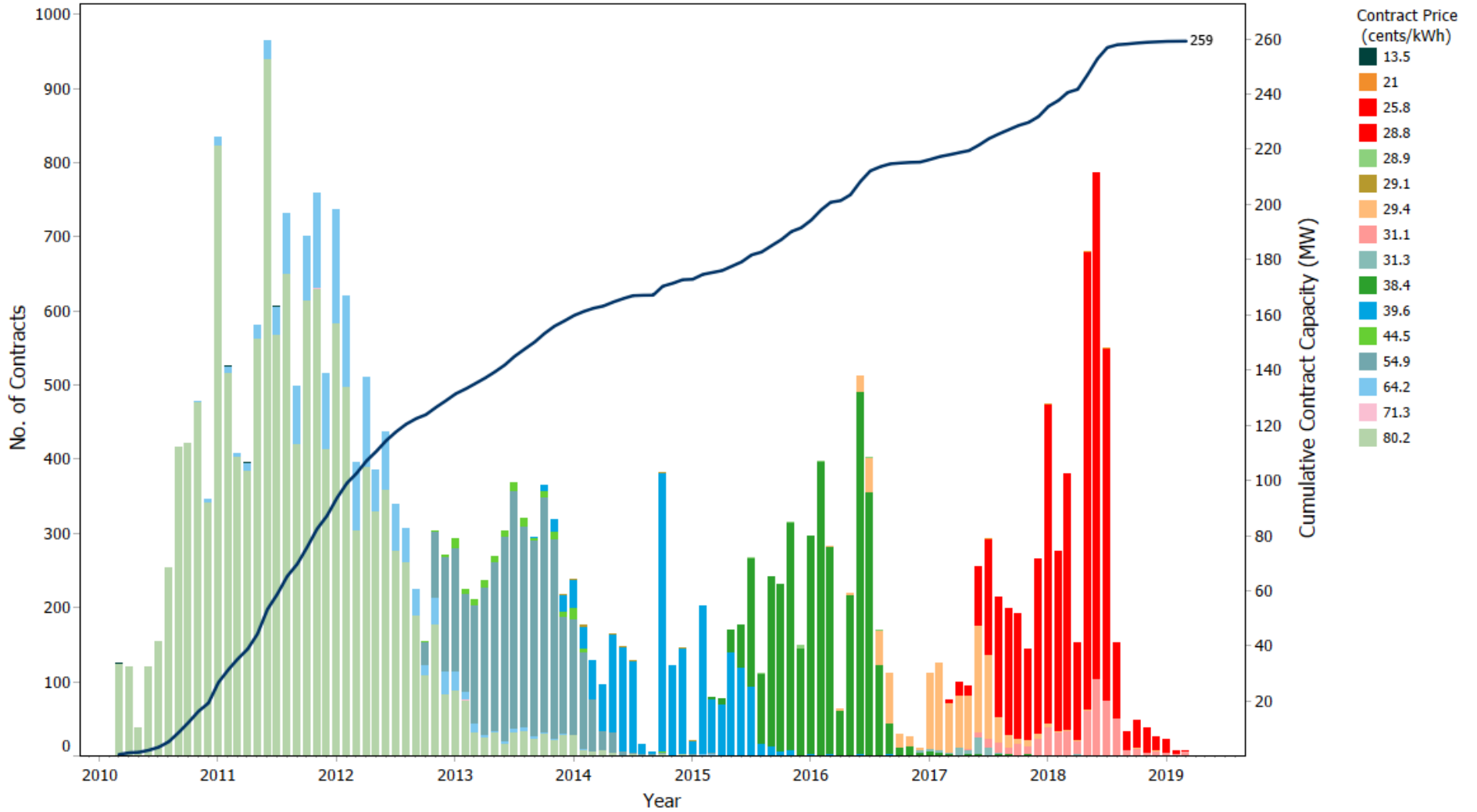
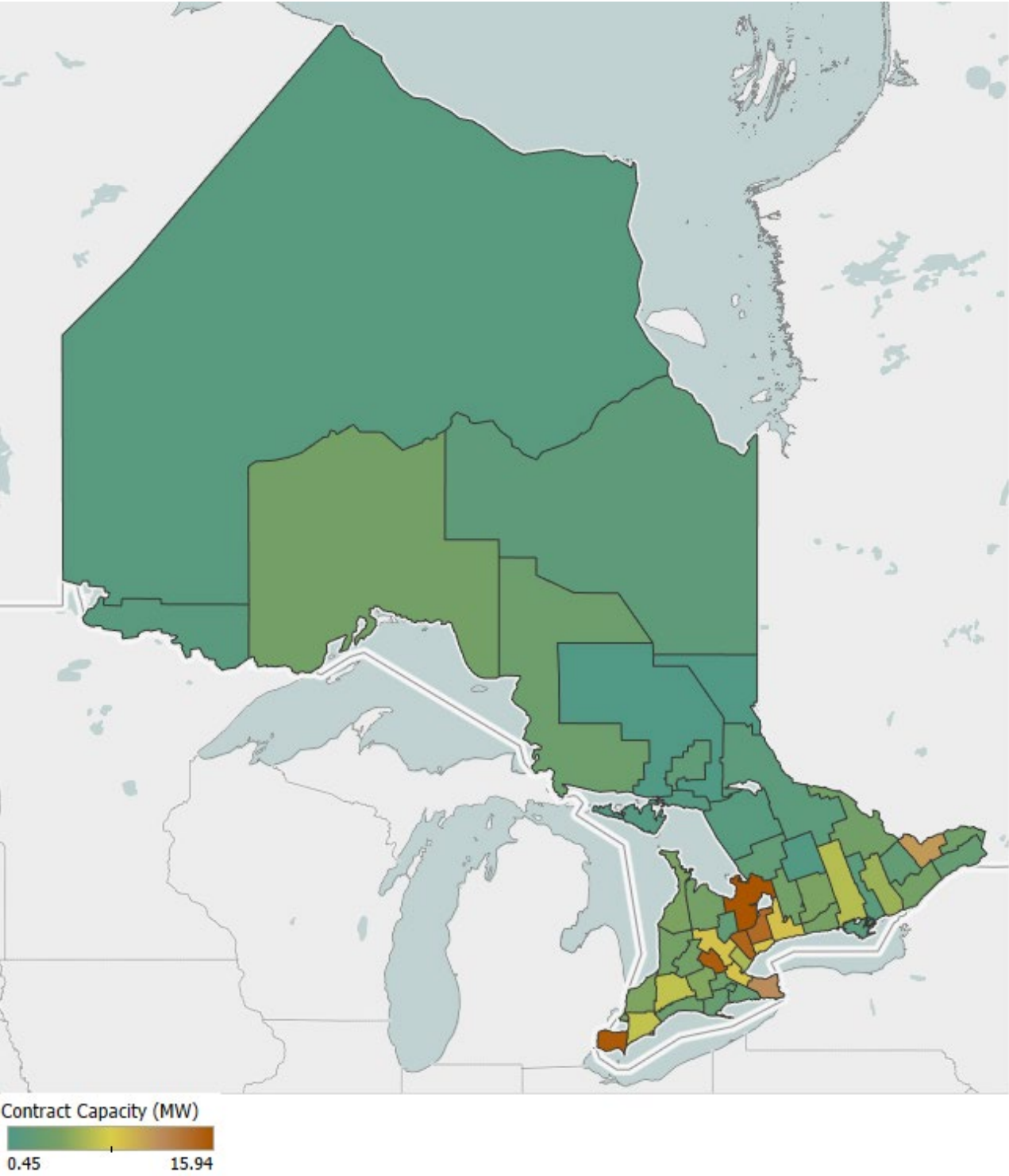


Figure 9: Map of microFIT Contracted Capacities in Ontario Census Divisions



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