

Supplementary file

Show Me the Money: Side-Payments and the Implementation of International Agreements in Federal Systems

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List of official documents

Agreement on the equivalency of federal and Alberta regulations respecting the release of methane from the oil and gas sector in Alberta, 2020, between the Government of Canada and the Government of Alberta, 1 October 2020.

Agreement on the Equivalency of Federal and British Columbia Regulations Respecting the Release of Methane from the Oil and Gas Sector in British Columbia, 2020, between the Government of Canada and the Government of British Columbia, 26 February 2020.

Agreement on the equivalency of federal and Nova Scotia regulations for the control of greenhouse gas (GHG) emissions from electricity producers in Nova Scotia, 2020, between the government of Canada and the government of Nova Scotia, 14 November 2019.

Agreement on the equivalency of federal and Saskatchewan regulations for the control of greenhouse gas emissions from electricity producers in Saskatchewan, 2020, between the Government of Canada and the Government of Saskatchewan, 3 May 2019.

Agreement on the equivalency of federal and Saskatchewan regulations respecting the release of methane from the oil and gas sector in Saskatchewan, 2020, between the Government of Canada and the Government of Saskatchewan, 23 September 2020.

Canadian Council of Ministers of the Environment (2015): Environment Ministers Reaffirm Their Commitment to Fight Climate Change, 23 June 2015.

Canadian Council of Ministers of the Environment (2016): Environment Ministers Discuss Climate Change and Clean Air, 3 October 2016.

Canadian Council of Ministers of the Environment (2017): Significant Progress on Climate Action and Air Quality, 3 November 2017.

Canadian Council of Ministers of the Environment (2018): Canadian Environment Ministers Aim for Zero Plastic Waste, 23 November 2018.

Canadian Council of Ministers of the Environment (2019): Environment Ministers Take Action on Plastic Waste in Canada, 27 June 2019.

Canadian Council of Ministers of the Environment (2020): Environment Ministers Discuss Sustainable Economic Recovery; Complete Action Plan on Zero Plastic Waste, 23 July 2020.

Canadian Council of Ministers of the Environment (2021): Environment Ministers Discuss Opportunities to Continue Taking Action on Climate Change and Green Economic Recovery, 13 December 2021.

Council of the EU (2016a): Council Decision 2016/590 on the signing, on behalf of the European Union, of the Paris Agreement adopted under the United Nations Framework Convention on Climate Change, 11 April 2016.

Council of the EU (2016b): Council Decision 2016/1841 on the conclusion, on behalf of the European Union, of the Paris Agreement adopted under the United Nations Framework Convention on Climate Change, 5 October 2016.

European Commission (2020): Communication from the Commission COM (2020) 21 on Sustainable Europe Investment Plan/European Green Deal Investment Plan, 14 January 2020.

European Council (2014a): Conclusions (EUCO 7/1/14), 21 March 2014.

European Council (2014b): Conclusions (EUCO79 /14), 27 June 2014.

European Council (2014c): Conclusions (EUCO 169/14), 24 October 2014.

European Council (2015): Conclusions (EUCO 28/15), 18 December 2015.

European Council (2016): Conclusions (EUCO 141/16), 18 March 2016.

European Council (2017): Conclusions (EUCO 8/17), 23 June 2017.

European Council (2018): Conclusions (EUCO 17/18), 14 December 2018.

European Council (2019a): Conclusions (EUCO 1/19), 22 March 2019.

European Council (2019b): Conclusions (EUCO 29/19), 12 December 2019.

European Council (2020a): Conclusions (EUCO 15/20), 16 October 2020.

European Council (2020b): Conclusions (EUCO 22/20), 11 December 2020.

European Council (2021a): Conclusions (EUCO 5/21), 25 May 2021.

European Council (2021b): Conclusions (EUCO 17/21), 22 October 2021.

First Ministers' Meeting (2016): Vancouver Declaration on clean growth and climate change, 3 March 2016.

First Ministers' Meeting (2018): First Ministers Meet to Discuss Economic Growth and Jobs for Canadians, 7 December 2018.

Government of Canada (2015): Canada's INDC to the UNFCCC, 15 May 2015.

Government of Canada (2016a): Federal, provincial and territorial governments working together on first steps towards a pan-Canadian framework to address climate change, 29 January 2016.

Government of Canada (2016b): Federal Actions for a Clean Growth Economy. Delivering on the Pan-Canadian Framework on Clean Growth and Climate Change.

Government of Canada (2016c): Pan-Canadian Framework on Clean Growth and Climate Change, 9 December 2016.

Government of Canada (2017a): Canada's 2017 Nationally Determined Contribution Submission to the United Nations Framework Convention on Climate Change.

Government of Canada (2017b): Pan-Canadian Framework on Clean Growth and Climate Change. First Annual Synthesis Report on the Status of Implementation, December 2017.

Government of Canada (2018): Pan-Canadian Framework on Clean Growth and Climate Change. Second Annual Synthesis Report on the Status of Implementation, December 2018.

Government of Canada (2019): Pan-Canadian Framework on Clean Growth and Climate Change. Third Annual Synthesis Report on the Status of Implementation, December 2019.

Government of Canada (2020): Pan-Canadian Framework on Clean Growth and Climate Change. Fourth Annual Synthesis Report on the Status of Implementation, December 2020.

Government of Canada (2021): Canada's 2021 Nationally Determined Contribution under the Paris Agreement.

Government of Germany and the European Commission (2020): The update of the nationally determined contribution of the European Union and its Member States, 17 December 2020.

Government of Latvia and European Commission (2015): Intended Nationally Determined Contribution of the EU and its Member States, 6 March 2015.

Government of Manitoba (2018): Government of Manitoba letter announcing adoption of the Pan-Canadian Framework on Clean Growth and Climate Change, 20 February 2018.

Office of the Prime Minister (2016): Communiqué of Canada's First Ministers, 3 March 2016.

Official Journal of the European Union (2019): Regulation (EU) 2019/943 of the European Parliament and of the Council on the internal market for electricity (Text with EEA relevance), 5 June 2019.

Official Journal of the European Union (2021): Regulation (EU) 2021/1056 of the European Parliament and of the Council establishing the Just Transition Fund, 24 June 2021.

Search for news articles

I searched for news articles on events and developments at the Canadian and EU-levels and on the conduct of all member state and provincial governments that have been in power for at least two years since the adoption of the Paris Agreement. As search key words, I used a combination of the [name of the sub-federal entity OR name of the head of government] and [Paris Accord OR Paris Agreement OR climate].

List of interviews

This project was reviewed and cleared by the Comité d'éthique de la recherche en arts et humanités (CERAH) of the Université de Montréal (Project CERAH-2019-154-D).

Interview 1: Head of unit, Federal Ministry for Economic Affairs and Energy, Germany, 12 March 2020.

Interview 2: Senior policy analyst, Government of British Columbia, 4 November 2021.

Interview 3: Policy analyst, Government of British Columbia, 5 November 2021.

Interview 4: Senior policy analyst, Government of British Columbia, 15 November 2021.

Interview 5: Senior policy advisory, Government of Alberta, 18 November 2021.

Interview 6: Director of intergovernmental relations, Government of Alberta, 24 November 2021.

Interview 7: Former minister at the provincial level, Canada, 9 December 2021.

Interview 8: Advisor, Government of Alberta, 16 December 2021.

The three background talks are not included in this list as the interviewees asked for full confidentiality.

Operationalization of conditions

The operationalization of the four conditions is based on research I conducted as part of my PhD thesis at the Université de Montréal and the LMU Munich. Further information and data are available upon request.

Policy preferences

In the context of my dissertation, I examined the party platforms of political parties that have been in power in Canadian provinces and EU member states for at least two years since the adoption of the Paris Agreement in December 2015. In the case of a coalition government, I focused on the senior ruling party. I coded the parties' climate policy preferences along the following three dimensions:

Dimension	Score			
	1.0	0.7	0.3	0.0
Position on climate change	Climate change as guiding theme and commitment to climate action	Coherent self-commitment to act	Marginal and neutral reference to climate change	No reference to or denial of climate change
Climate target and policy propositions	Proposition of relevant climate targets and broad programme of specific policies	List of individual climate policy measures	No or only minimal climate action proposals or contradictory policy proposals	Proposition to dismantle existing climate policies or targets
Link between climate action and other policy fields and priorities	Cross-cutting nature of the climate action plan	Advocacy of regulatory intervention in the economy for the sake of climate protection	Call for balance between the continuation of the polluting sectors and climate change mitigation	Prioritisation and support of polluting sectors over climate protection

The total score for a party's climate policy preference is the average of the scores for the three dimensions.

Relevance of polluting sectors

Sectors that are hard to decarbonize are agriculture, natural resource extraction, and manufacturing industries (Åhman et al., 2017; Key & Tallard, 2012).¹ I use data from Statistics Canada and Eurostat to calculate the GDP share of these sectors:

- Statistics Canada. 2022. 'Gross Domestic Product (GDP) at Basic Prices, by Industry, Provinces and Territories, Percentage Share (Table 36-10-0400-01)'. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3610040001>
- Eurostat. 2022. 'National Accounts Aggregates by Industry (up to NACE A*64)'. https://ec.europa.eu/eurostat/databrowser/view/nama_10_a64/default/table?lang=en

Financial capacity

GDP per capita data come from Statistics Canada and the World Bank:

- Statistics Canada. 2021. 'Gross Domestic Product, Expenditure-Based, Provincial and Territorial, Annual (Table 36-10-0222-01)'. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3610022201>
- Statistics Canada. 2021. 'Population Estimates on July 1st, by Age and Sex (Table 17-10-0005-01)'. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1710000501>

¹ Åhman, M., Nilsson, L. J., & Johansson, B. (2017). Global Climate Policy and Deep Decarbonization of Energy-Intensive Industries. *Climate Policy*, 17(5), 634–49. Key, N., & Tallard, G. (2012). Mitigating Methane Emissions from Livestock: A Global Analysis of Sectoral Policies. *Climatic Change*, 112(2), 387–414.

- World Bank. 2022. 'GDP per Capita (Constant 2015 US\$) - European Union, Canada, Australia'. <https://data.worldbank.org/indicator/NY.GDP.PCAP.KD?end=2015&locations=EU-CA&start=2015>

Power

Regarding population and economic size, I use data from Statistics Canada and Eurostat:

- Statistics Canada. 2021. 'Gross Domestic Product, Expenditure-Based, Provincial and Territorial, Annual (Table 36-10-0222-01)'. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3610022201>
- Statistics Canada. 2021. 'Population Estimates on July 1st, by Age and Sex (Table 17-10-0005-01)'. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1710000501>
- Eurostat. 2022. 'GDP and Main Components (Output, Expenditure and Income)'. https://ec.europa.eu/eurostat/databrowser/view/nama_10_gdp/default/table?lang=en
- Eurostat. 2022. 'Population on 1 January'. <https://ec.europa.eu/eurostat/databrowser/view/tps00001/default/table?lang=en>

To combine population and GDP in one indicator, I use a logical disjunction.

Calibration process

I use the fsQCA 4.0 package for Mac (Ragin & Davey, 2022)² to calibrate the conditions (exception: manual coding for climate policy preference).

Condition	Indicator	Calibration
Climate policy preference	Climate policy agenda in party platform	= average of the scores for the three dimensions ³
Relevance of polluting industries	Share of mining, agricultural and manufacturing sectors in GDP	= calibrate (Share of polluting sectors, 0.35, 0.215, 0.05)
Financial capacity	GDP per capita	= calibrate (GDP per capita, 70.000, 30.000, 5.000)
Power within federal system	Combination of share of population and GDP within federal system	= Population OR GDP Canada: Population = calibrate (Share of population, 0.4, 0.08, 0.0) GDP = calibrate (Share of GDP, 0.4, 0.08, 0.0) EU: Population = calibrate (Share of population, 0.2, 0.07, 0.0) GDP = calibrate (Share of GDP, 0.25, 0.05, 0.0)

² Ragin, C C., & Davey, S. (2022). Fuzzy-Set/Qualitative Comparative Analysis 4.0.

³ If a green party is part of the government coalition, I add 0.3 to the calculated score. If a minority government has a formalized support agreement with a green party in parliament, I add 0.2. If the final score is 0.5, I compare the case in question with other cases near the threshold of 0.5 to decide whether to code it as 0.51 or as 0.49.

Calibrated values

Federal system	Sub-federal government	Policy preference	Relevance of polluting industries	Financial capacity	Power
Canada	Kenney (AB)	0.17	0.69	0.93	0.71
	Notley (AB)	0.51	0.69	0.93	0.71
	Horgan (BC)	1.00	0.16	0.69	0.62
	Pallister (MA)	0.49	0.29	0.67	0.16
	Gallant (NB)	0.43	0.24	0.57	0.1
	Higgs (NC)	0.43	0.24	0.57	0.1
	Ball (NWL)	0.43	0.69	0.82	0.09
	McNeil (NS)	0.51	0.13	0.56	0.12
	Ford (ON)	0.20	0.22	0.72	0.95
	Wynne (ON)	0.90	0.22	0.72	0.95
	King (PEI)	0.43	0.30	0.54	0.05
	MacLauchlan (PEI)	0.43	0.3	0.54	0.05
	Couillard (QC)	0.63	0.31	0.62	0.8
	Legault (QC)	0.43	0.31	0.62	0.8
	Moe (SK)	0.20	0.94	0.91	0.2
	Wall (SK)	0.17	0.94	0.91	0.2
EU	Michel (BE)	0.51	0.25	0.7	0.27
	Borisov (BG)	0.57	0.57	0.06	0.09
	Plenković (HR)	0.57	0.4	0.1	0.07
	Anastasiades (CY)	0.20	0.07	0.31	0.05
	Babiš (CZ)	0.27	0.8	0.19	0.12
	Sobotka (CZ)	0.43	0.8	0.19	0.12
	Frederiksen (DK)	1.00	0.29	0.85	0.16
	Rasmussen (DK)	0.20	0.29	0.85	0.16
	Ratas (EE)	0.57	0.56	0.18	0.05
	Marin (FI)	1.00	0.47	0.72	0.12
	Sipilä (FI)	0.63	0.47	0.72	0.12
	Macron/Philippe (FR)	0.57	0.19	0.62	0.88
	Merkel (DE)	0.57	0.62	0.7	0.95
	Mitsotakis (EL)	0.49	0.17	0.19	0.12
	Tsipras (EL)	0.51	0.17	0.19	0.12
	Orbán (HU)	0.10	0.71	0.11	0.11
	Varadkar (IE)	0.43	0.94	0.92	0.14
	Kariņš (LV)	0.51	0.33	0.13	0.06
	Kučinskis (LV)	0.49	0.33	0.13	0.06
	Skvernelis (LT)	0.80	0.64	0.13	0.06

	Bettel (LU)	0.93	0.06	1	0.06
	Muscat (MT)	0.63	0.12	0.35	0.05
	Rutte (NTL)	0.63	0.27	0.76	0.53
	Morawiecki (PL)	0.37	0.65	0.11	0.59
	Szydło (PL)	0.10	0.65	0.11	0.59
	Costa (PT)	1.00	0.31	0.22	0.12
	Fico (SLK)	0.20	0.8	0.16	0.08
	Pellegrini (SLK)	0.20	0.8	0.16	0.08
	Cerar (SI)	0.57	0.61	0.25	0.06
	Rajoy (ES)	0.63	0.24	0.37	0.69
	Löfven (SE)	1.00	0.31	0.83	0.3