

Jonas Schmid

Decentralization and Wind Energy Permitting

An Evaluation of Implementation Effectiveness
in Switzerland and Europe



Nomos

Politik und Demokratie in den kleineren Ländern Europas
Politics and Governance in the Smaller European Democracies

Herausgegeben von | edited by

Prof. Dr. Ludger Helms (Innsbruck)

Prof. Dr. Hanspeter Kriesi (Firenze)

Prof. Dr. Zoe Lefkofridi (Salzburg)

Prof. Dr. Alexander Trechsel (Luzern)

Prof. Dr. Adrian Vatter (Bern)

Band 20 | Volume 20

Jonas Schmid

Decentralization and Wind Energy Permitting

An Evaluation of Implementation Effectiveness
in Switzerland and Europe



Nomos

Published with the support of the Swiss National Science Foundation that promotes scientific research (grant no. 10BP12_224045).

Inaugural dissertation submitted by Jonas Schmid in fulfillment of the requirements for the degree of Doctor rerum socialium (Dr. rer. soc.) at the Faculty of Business, Economics and Social Sciences of the University of Bern, Switzerland. The faculty accepted this work as dissertation on 24.08.2023 at the request of the two advisors Prof. Dr. Adrian Vatter (University of Bern) and Prof. Dr. Aya Kachi (University of Basel), without wishing to take a position on the view presented therein.

The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available on the Internet at <http://dnb.d-nb.de>

a.t.: Bern, Univ., Diss., 2024

1st Edition 2024

© Jonas Schmid

Published by

Nomos Verlagsgesellschaft mbH & Co. KG
Waldseestraße 3–5 | 76530 Baden-Baden
www.nomos.de

Production of the printed version:

Nomos Verlagsgesellschaft mbH & Co. KG
Waldseestraße 3–5 | 76530 Baden-Baden

ISBN 978-3-7560-1715-7 (Print)

ISBN 978-3-7489-4445-4 (ePDF)

DOI <https://doi.org/10.5771/9783748944454>



Online Version
Nomos eLibrary



This work is licensed under a Creative Commons Attribution
– Non Commercial – No Derivations 4.0 International License.

Acknowledgments

"Energy and persistence conquer all things."

—Benjamin Franklin

The present study represents the result of over four years of research that has been funded by the doc.ch-program of the Swiss National Science Foundation (91%) and by a small grant of the Federal Office of Energy (BFE) (9%).¹ 7'198 hours of work (and counting) after having started to do research on the topic, the final product is finished and can finally be presented to the scientific community. And I hope readers will find it worth their while. Especially those that are interested in decentralization of the Swiss political system, the state of the Swiss energy transition and wind energy in particular will hopefully discover aspects that they had not known before. I also sincerely hope that this effort will provide decision-makers with the groundwork-knowledge to begin to develop a more sustainable future starting in Switzerland. In this sense, I view the present work as a tribute to the gargantuan task ahead.

I would like to express my heartfelt gratitude to those people and institutions that have made this work possible. My first supervisor Prof. Dr. Adrian Vatter and his insightful comments and suggestions on research, as well as his unwavering support in all matters concerning PhD-ing, have contributed to this study most significantly. My second supervisor, Prof. Dr. Aya Kachi, has also provided much needed and well-grounded suggestions on how to approach a topic or improve on a methodological aspect. During the phase of data collection, which took 1.5 years, I have also had the chance to employ a part-time student assistant that has supported me with all types of daily issues, including the transcription of 20 interviews. Laura Vogel was there when the research project required rewording, better questionnaires, but she also took on repeated phone calls to Spain, among other tasks. I am especially grateful for her easygoing yet always diligent and precise manner of work.

In addition, I want to thank my friend and colleague Rahel Freiburghaus, who has been willing to read and always provide constructive feedback on even the most cryptic of my texts and analyses. And although my friend and colleague Pierre Lüssi started to work at our Chair mid-way during my PhD,

1 SNF-grant: P0BEP1_181636; BFE-grant: SI/502014-01.

Acknowledgments

his insights and general helpfulness have quickly made him a valuable asset to my research and my morale. I am also indebted to the team at the Chair of Swiss Politics. They have readily provided tips for all possible research and administrative problems and have continuously bolstered my resolve to write this PhD. They are: Claudia Alpiger, Tobias Arnold, Alexander Arens, Davide Della Porta, Martina Flick Witzig, Madleina Ganzeboom, Nina Fink, Sean Müller, Sara Schmid and Anna Storz. Even though they have been working at a different Chair, as constant companions throughout my dissertation time (and fellow sufferers of PhD-ing), I am also very grateful to Julian Erhardt, Maximilian Filsinger, Meret Lütolf, Steffen Wamsler and Théoda Woeffray for their kind words of calm, the occasional encouragement and essential conversations on life, liberty and the pursuit of happiness. Maya Ackermann, Mario Angst, Daniel Auer, Till Beer, Nik Bieri, Gracia Brückmann, Clau Dermont, Walid El-Ajou, Sarah Engler, Lukas Fesenfeld, Anna Fill, Manuel Fischer, Karin Frick, Marlène Gerber, Giada Gianola, Sophie Guignard, Victoria Härter, Valon Hasanaj, Anja Heidelberger, Laura Herzog, Nathalie Hofstetter, Karin Ingold, Marlene Kammerer, Lorenz Kammermann, Philipp Lutz, Maiken Maier, Simon Montfort, Dominique Oehrli, Manuela Rihm, Sophie Ruprecht, Hans-Peter Schaub, Max Schubiger, Isabelle Stadelmann-Steffen, Rebeka Sträter, David Weisstanner, Ruth Wiedemann, Alina Zumbrunn and Guillaume Zumofen have also been supportive of the project and/or have critically and constructively reviewed parts of the present work. The University of Bern, which has kindly enabled me to go about this endeavor, also merits my thanks: Shout out especially to Manuela Liem, Hannes Loretan, Gabriela Malzacher, Kerstin Nebel and “Schmidi” a.k.a. Michael Schmid. In addition, I am also grateful to the Nomos publishing house, especially to Beate Bernstein and Achim Jander.

Most of all, however, I feel very grateful that my family has continuously supported me throughout this research project. Especially my wife and friend for life, Aurelia, has endured my hours of work-related absent-mindedness, has fought with me against the little perceived injustices that some days had brought and has indulged with me in the little successes along the way. But probably the biggest credit must go to our 1-year-old daughter Liliane, who helped me realize what matters in life. May her future be free from dinosaur juice exhausts!

Bern, 10.11.2024

Jonas Schmid

Table of contents

Acknowledgments	5
List of figures	13
List of tables	17
List of abbreviations	21
I INTRODUCTION	29
Chapter 1: The problem of wind energy-authorization procedures	31
1.1. What is the problem? Research question and goals of this study	31
1.2. The social relevance	42
1.3. The academic relevance	48
1.3.1. The relevant branches of the literature	48
1.3.2. General contributions	53
1.3.3. Swiss-specific contributions to the literature	58
1.4. Research design, data and methods	62
1.5. Outline	66
II THEORY	67
Chapter 2: Actor-Centered Institutionalism (ACI)	69
2.1. Basic premises, function and origins of the ACI	69
2.2. The framework and its analytical categories	74
2.2.1. Actors	74
2.2.2. Actor constellations	77
2.2.3. Modes of interaction	80
2.3. Past applications of the ACI	83
2.4. Applying the ACI: towards an analytical model	86
2.4.1. Why the ACI is suitable to analyze the problem	86
2.4.2. The roles of institutions and policy rules	94

Table of contents

2.4.3. On the attribution of agency to contextual actors	97
2.4.4. The analytical model of this study	99
Chapter 3: Deriving and developing the main concepts	103
3.1. Decentralization	103
3.1.1. Decentralization in the Federation of Switzerland	103
3.1.2. Delineation and application	109
3.2. Implementation arrangements	122
3.2.1. Implementation in Switzerland	123
3.2.2. Delineation and application	131
3.3. Problem-solving effectiveness	136
3.3.1. Problem-solving effectiveness in Switzerland	136
3.3.2. Delineation and application	142
Chapter 4: Effects in an intermediary variable design	155
4.1. Link 1: Decentralization effects on implementation arrangements	155
4.2. Link 2: Implementation arrangement effects on problem-solving effectiveness	163
4.3. Link 3: Decentralization effects on problem-solving effectiveness	170
4.4. Political party effects on problem-solving effectiveness	175
III EMPIRICS	181
Chapter 5: Mapping implementation arrangements of Swiss wind-energy projects	183
5.1. Methods and data	183
5.2. On the way towards a permit: competences, procedural stages and phases	186
5.2.1. On the distribution of competences in the fields of energy, environment and spatial planning	186
5.2.2. The authorization procedure as governed by federal law	190
5.2.3. Cantonal differences in policy implementation	206
5.3. An overview of existing large-scale Swiss wind energy projects	212

5.4. Main actors involved in wind energy-implementation arrangements	231
5.4.1. Cantons: differences between project hosts and non-hosts	231
5.4.2. Municipalities: differences between project-hosts and non-hosts	235
5.4.3. Federal agencies	238
5.4.4. Associations and interest groups	244
5.4.5. Developers	247
5.5. The role of political parties	249
5.6. Positions and relations within wind energy project arrangements	254
5.6.1. Aggregate network graphs by stakeholder and theme	255
5.6.2. Relations in the average wind energy project network	262
5.6.3. Embedding the case of Swiss wind energy implementation arrangements in the literature	272
Chapter 6: Link 1: Decentralization effects on implementation arrangements	275
6.1. Methods and data	275
6.1.1. The Network Characteristics Survey (NCS)	277
6.1.2. Constructing implementation arrangements as networks	279
6.1.3. Testing, robustness and reporting thresholds	282
6.2. Decentralization between cantons	288
6.3. Decentralization effects	290
6.3.1. In non-mediated models	290
6.3.2. In mediation models	297
6.3.3. In exponential random graph models (ERGMs)	302
6.3.4. Comparing and interpreting results	304
6.4. Political party effects	309
6.4.1. In non-mediated models	309
6.4.2. In mediation models	311
6.4.3. In exponential random graph models (ERGMs)	313
6.4.4. Comparing and interpreting results	314

Table of contents

Chapter 7: Link 2: Implementation arrangement effects on problem-solving effectiveness	319
7.1. Methods and data	319
7.1.1. The Project Characteristics Survey (PCS)	319
7.1.2. Modeling strategy	322
7.2. Dependent variables: Measures of problem-solving effectiveness in comparison	330
7.3. Independent variables: An overview	335
7.4. Results of efficiency models	336
7.4.1. Actor constellations and modes of interaction	337
7.4.2. Actor orientations	356
7.5. Results of stakeholder efficacy rating models	357
7.5.1. Actor constellations and modes of interaction	358
7.5.2. Actor orientations	372
7.6. Comparing and interpreting efficiency and stakeholder efficacy ratings	378
Chapter 8: Link 3: Decentralization (and additional) effects on problem-solving effectiveness	385
8.1. Methods, data, and modeling strategies	385
8.1.1. Data sources	387
8.1.2. Modeling strategy	387
8.1.3. The series: controls, assumptions, levels	390
8.2. Decentralization effects	398
8.2.1. On hosting probability	398
8.2.2. On efficiency	404
8.2.3. On stakeholder efficacy ratings	407
8.3. Political party effects	415
8.3.1. On hosting probability	416
8.3.2. On efficiency	421
8.3.3. On stakeholder efficacy ratings	431
8.4. Policy rules effects	435
8.4.1. On efficiency	435
8.4.2. On stakeholder efficacy ratings	442

8.5. Comparing and interpreting effects	448
8.5.1. Decentralization effects	448
8.5.2. Partisan effects	451
8.5.3. Policy rules effects	455
Chapter 9: The bigger picture — onshore wind energy authorization procedures and deployment in Europe 2000–2018	459
9.1. Evaluating decentralization effects on onshore wind-energy authorization procedures in Europe	462
9.2. Data and methods	469
9.2.1. Data	469
9.2.2. Methods	472
9.3. Explaining onshore wind energy deployment	483
9.4. Explaining authorization procedure efficiency in Europe	490
9.5. Explaining onshore wind energy deployment in Europe using authorization duration as a predictor	499
9.6. Placing Switzerland in Europe	510
9.7. Interpretation and limitations of the European chapter	514
IV CONCLUSION	525
Chapter 10: Now what? Results, contributions, limitations	527
10.1. Summary of results and evaluation of hypotheses	527
10.1.1. Effects of Decentralization and implementation arrangements	528
10.1.2. Political party effects	539
10.1.3. Wind energy authorization procedures in Switzerland and Europe	548
10.2. General contributions	553
10.3. Swiss-specific contributions to the literature	558
10.4. Limitations and further research	562
10.5. Concluding thoughts	567
References	573
Data, methods and software references	637

List of figures

1.1	Switzerland's onshore installed wind energy capacity compared to Austria and the German states of Baden-Württemberg and Bavaria.	32
1.2	Quantified newspaper articles on wind energy in German- and French-speaking print media in Switzerland.	36
2.1	The ACI's analytical categories.	74
2.2	The present study's analytical model.	100
3.1	Legislative (top) and administrative (bottom) decentralization in two policy fields in Switzerland, 1850–2010.	106
3.2	Fiscal decentralization in Switzerland, 1850–2010.	108
3.3	The concept-operationalization tree of problem-solving effectiveness as used in this study.	153
5.1	Chapter 5 focus in the present study's analytical model.	185
5.2	Overview over federal law proceedings and over phases, as used in this research project.	205
5.3	Average duration of planning stages in months.	218
5.4	Fully aggregated general collaboration network, by implementation arrangement stakeholder category.	256
5.5	Fully aggregated above-legal-minima-collaboration network, by implementation arrangement stakeholder category.	258
5.6	Fully aggregated conflict network, by implementation arrangement stakeholder category.	259
5.7	Fully aggregated trust network, by implementation arrangement stakeholder category.	261
6.1	Chapter 6 focus in the present study's analytical model.	276
6.2	Graphical depiction of Mueller's (2015) decentralization index and its dimensions.	289
6.3	Mediation model using perceived local autonomy as treatment, the number of organizations as a mediator and agreement/conflict intensity as a dependent variable.	299

List of figures

6.4	Mediation model using a municipality's French-language as a dummy treatment, the number of organizations as a mediator and agreement/conflict intensity as a dependent variable.	300
6.5	Mediation model using a municipality's French language as a dummy treatment, perceived local autonomy as a mediator and agreement/conflict intensity as a dependent variable.	303
6.6	Mediation model using a municipality's French-language as a dummy treatment, the fraction of left-party cantonal parliament seats as a mediator and trust/mistrust intensity as a dependent variable.	312
7.1	Chapter 7 focus in the present study's analytical model.	320
7.2	The distribution of stakeholder ratings and efficiency measures in a combined violin- and box plot.	333
7.3	Survival curve using Kaplan-Meier estimates for all strata (empty model).	337
7.4	Survival curves and model fit graphs for two models with either maximum or minimum effect magnitude of the number of involved organizations.	339
7.5	Survival curves and model fit graphs for two models with either maximum or minimum effect magnitude of the number of veto organizations.	343
7.6	Survival curves and model fit graphs for two models with either maximum or minimum effect magnitude of reputational power index scores.	347
7.7	Survival curves and model fit graphs for two models with either maximum or minimum effect magnitude of the variable of difference in the coalitions' reputational power index scores.	349
7.8	Survival curves and model fit graphs for two models with either maximum or minimum effect magnitude of trust density.	352
7.9	Survival curves and model fit graphs for two models with either maximum or minimum effect magnitude of trust intensity.	354
7.10	Stakeholder ratings by dependent variable. The independent variable measures the number of organizations involved per project.	359
7.11	Stakeholder ratings by dependent variable. The independent variable measures the number of veto organizations involved per project.	364

7.12	Stakeholder ratings by dependent variable. The independent variable measures reputational power of involved organizations averaged over their categories within projects.	366
7.13	Stakeholder ratings by dependent variable. The independent variable measures the mean intensity of agreement ties (pos.) and conflict ties (neg.) averaged per project.	370
7.14	Stakeholder ratings by dependent variable. The independent variable is the factor of “full preference scores”.	374
7.15	Stakeholder ratings by dependent variable. The independent variable measures the difference between the full factor orientation scores of opposing coalitions.	376
8.1	Chapter 8 focus in the present study’s analytical model.	386
8.2	Predicted probabilities of decentralization effects on the cantonal probability of hosting a wind energy (WE)-project.	401
8.3	Survival curves and model fit graphs for the effect of perceived local autonomy.	406
8.4	IV: policy dimension indicator of personnel decentralization; DVs: all significant stakeholder efficacy rating dimensions.	413
8.5	IV: politics dimension indicator of representational decentralization; DVs: all significant stakeholder efficacy rating dimensions.	414
8.6	IV: perceived local autonomy; DVs: all significant stakeholder efficacy rating dimensions.	415
8.7	Political party votes cast by farmers vs. cast by citizens of all other professions.	420
8.8	Predicted probabilities of the partisan effect of the size of the SVP vote share on the municipal probability of hosting a WE-project.	422
8.9	Survival curves and model fit graphs for the effect of the share of left parties in the cantonal executive 2000–2018.	428
8.10	Survival curves and model fit graphs for the effect of the share of the SVP vote share parties in the National Council elections 2015 on the municipal level.	430
8.11	IV: CVP seat share in ct. parliaments, mean 2000–2018 and by project; DVs: all significant stakeholder efficacy rating dimensions.	436

List of figures

8.12	IV: CVP vote share in National Council elections 2015 by municipality and by project; DVs: all significant stakeholder efficacy rating dimensions.	438
8.13	Survival curves and model fit graphs for the effect of perceived blocking through CSP elaboration.	440
8.14	Survival curves and model fit graphs for the effect of extent of associational complaints.	443
8.15	IV: extent of associational complaints (ordinal); DVs: all significant stakeholder efficacy rating dimensions.	445
8.16	IV: extent of federal assessment and coordination workload (ordinal); DVs: all significant stakeholder efficacy rating dimensions.	447
9.1	Analytical model of chapter 9 on Europe's onshore WE-authorization procedures.	461
9.2	Bivariate plots of self-rule (vertical axis) and both deployment variables (horizontal axes).	466
9.3	Map of Europe showing countries that participated in the survey and for which panel data is available.	470
9.4	Mediation model graph with self-rule as treatment, regional authorization differences as mediator and authorization procedure duration as dependent variable.	498
9.5	Mediation model graph with mean policy density as treatment, authorization procedure duration as mediator and installed capacity as dependent variable.	507
9.6	Mediation model graph with authorization policy duration as treatment, mean policy density as mediator and installed capacity as dependent variable.	510
9.7	Discovered relations in chapter 9 on Europe's onshore WE-authorization procedures.	516
10.1	Graphical overview over effects of decentralization and implementation arrangements, following links 1, 2 and 3.	529
10.2	Graphical overview over partisan effects.	540

List of tables

3.1	Dimensions of decentralization investigated in this research project by level of comparison.	116
4.1	Possible positive-relation combinations of link 1 and link 2 factors in an overarching third link.	173
4.2	Possible negative-relation combinations of link 1 and link 2 factors in an overarching third link.	174
5.1	Realistic WE-project types.	200
5.2	Descriptive project overview data.	213
5.3	Average authorization procedure data for project samples. Starting point is the met mast authorization, end points as indicated.	215
5.4	Average authorization procedure data by phase.	217
5.5	Possible delays due to cantonal structure plan (CSP)-enactment.	221
5.6	Descriptive assessment effort data.	221
5.7	Descriptive planning-expenditure data — excluding construction costs of projects in phases 3 and 4.	224
5.8	Descriptive involvement and participation data.	225
5.9	Yes-vote share summary data on WE-projects.	227
5.10	Descriptive legal complaints data.	230
5.11	Comparison of decentralization means between WE- and non-WE-cantons for Mueller's (2022) index.	232
5.12	Comparison of geophysical, cultural, demographic and economic conditions between WE- and non-WE-cantons.	234
5.13	Comparison of decentralization and capacities means between WE- and non-WE-municipalities.	237
5.14	Comparison of means of sectoral policy conditions between WE- and non-WE-municipalities.	239
5.15	Comparison of means of geographic, demographic and cultural conditions between WE- and non-WE-municipalities.	241

List of tables

5.16	Comparison between WE-hosts and non-WE-hosts: vote shares in percentages of national parties in NC elections 2015 by level of district.	251
5.17	Cantonal partisan and party system comparison between WE-hosts and non-WE-hosts.	253
5.18	Actor constellation metrics in the mean project-implementation arrangement.	263
5.19	Mode of interaction metrics in the mean project-implementation arrangement.	268
5.20	Actor orientation metrics in the mean project-implementation arrangement.	272
6.1	Organizational project networks generation specifications	282
6.2	Decentralization effects on implementation arrangement aspects.	306
6.3	Partisan effects on implementation arrangement aspects.	316
7.1	Summary of link 2 modeling strategy.	329
7.2	Two-by-two table of possible detractor interpretations.	330
7.3	Correlation between indicators of efficiency and stakeholder efficacy ratings.	331
7.4	Independent variables tested in the analytical categories of actor constellations (AC) and modes of interaction (MOI).	334
7.5	Significant determinants of two concepts of problem-solving effectiveness.	380
8.1	Summary of link 3 modeling strategy.	391
8.2	Expected WE-contribution by canton to fulfill the Energy Strategy 2050.	393
8.3	Summaries of logit models. DV: efficiency; IV: decentralization.	400
8.4	Summaries of Cox-ph models. DV: Duration; IV: Decentralization.	405
8.5	Summaries of multiple linear regression models. DV: Overall stakeholder efficacy ratings; IV: Decentralization.	408
8.6	Excerpts of linear regression models by main IV and across multiple DVs of stakeholder efficacy ratings.	409
8.7	Summaries of logit models. DV: hosting probability; IV: partisan variables on the municipal level.	418

8.8	Summaries of Cox-ph models. DV: efficiency; IV: partisan variables on the cantonal level.	425
8.9	Hazard coefficients, ratios, and percentage change of the hazard in cantonal partisan efficiency models.	427
8.10	Summaries of Cox-ph models. DV: efficiency; IV: partisan variables on the municipal level.	429
8.11	Summaries of multiple linear regression models. DV: overall efficacy factor scores; IV: partisan variables on the cantonal level.	433
8.12	Excerpts of models by main IV of interest and across multiple DVs of stakeholder efficacy ratings.	434
8.13	Summaries of multiple linear regression models. DV: overall efficacy factor scores; IV: partisan variables on the municipal level.	437
8.14	Summary of decentralization effects on problem-solving effectiveness (PSE) concepts.	449
8.15	Summary of partisan effects on PSE concepts.	452
8.16	Summary of policy rule series effects on PSE concepts.	455
9.1	Implementation arrangement aspects investigated in this European chapter.	479
9.2	Summaries of panel analysis of “base models” checking for the effects of self-rule on the deployment measure of installed capacity.	485
9.3	Summaries of panel analysis of “base models” checking for the effects of self-rule on the deployment measure of realized potential.	486
9.4	Summaries of mixed models checking for the effects of self-rule on the deployment variable of installed capacity.	487
9.5	Summaries of mixed models checking for the effects of self-rule on the deployment variable of realized potential.	488
9.6	Summaries of efficiency base models.	492
9.7	Sensitivity analysis of Bayesian R^2 and posterior masses for decentralization variables.	494
9.8	Summaries of theory-guided vs. atheoretic benchmark models of authorization procedure duration.	495
9.9	Base models of deployment with authorization procedure duration as an IV.	501

List of tables

9.10 Sensitivity analysis of Bayesian R^2 and posterior masses for authorization procedure duration.	503
9.11 Summaries of benchmark models of installed capacity.	505
9.12 Summaries of benchmark models of realized potential.	506
9.13 Switzerland's place in Europe with regard to decentralization and onshore WE-authorization procedures.	513

List of abbreviations

Cantons in alphabetic order

AG	Aargau
AI	Appenzell Inner-Rhodes
AR	Appenzell Outer-Rhodes
BE	Bern
BL	Basel-Countryside
BS	Basel-City
FR	Fribourg
GE	Geneva
GL	Glarus
GR	Grisons
JU	Jura
LU	Lucerne
NE	Neuchâtel
NW	Nidwalden
OW	Obwalden
SG	St. Gall
SH	Schaffhausen
SO	Solothurn
SZ	Schwyz
TG	Thurgau
TI	Ticino
UR	Uri
VD	Vaud
VS	Valais
ZG	Zug
ZH	Zurich

List of abbreviations

National political parties in Switzerland

CVP	Christian Democratic People's Party (merged with other centrist parties and renamed on the national level as "The Center" as of 01.01.2021)
FDP	FDP — The Liberals
GLP	Swiss Green Liberal Party
GPS	Swiss Green Party
SP	Swiss Social Democratic Party
SVP	Swiss People's Party

Organizations and other abbreviations

AC	Actor Constellation
ACF	Advocacy Coalition Framework
ACI	Actor-Centered Institutionalism
ACME	Average Causal Mediation Effect
ADE	Average Direct Effect
ALM	Above-Legal-Minima
AO	Actor Orientations
ARE	Federal Office of Spatial Development
ASTRA	Federal Roads Office
BAFU	Federal Office for the Environment
BAK	Federal Office of Culture
BAKOM	Federal Office of Communications
BAZL	Federal Office for Civil Aviation
BBl	Federal Gazette (official publication organ of the Swiss Confederation), example with system explanations in parentheses: BBl (Abbr.) 2002 (Year) 4636 (First page no.)
BFE	Federal Office of Energy
BFS	Federal Office of Statistics
BGE	Federal Court Decision, example with system explanations in parentheses: BGE (Abbr.) I (Court section) C (Category of appeal) 36_2011 (Consecutive number by year)
BPR	Federal Act on Political Rights
CLUP	Cantonal Land-Use Plan
CSP	Cantonal Structure Plan
DV	Dependent Variable

EDA	Federal Department of Foreign Affairs
EFA	Exploratory Factor Analysis
EFV	Federal Finance Administration
ERGM	Exponential Random Graph Model
ES 2050	Energy Strategy 2050
EJPD	Federal Department of Justice and Police
ENHK	Federal Commission for the Protection of Nature and Cultural Heritage
ESTI	Federal Inspectorate for Heavy Current Installations
FFF	Master Plan on Crop Rotation Areas
FTE	Full-Time Equivalents
GW	Gigawatt (capacity, 1 GW = 1'000'000 KW)
GWEC	Global Wind Energy Council
GWh	Gigawatt-hour (energy, 1 GWh = 1'000'000 kWh)
HCA	Hierarchical Cluster Analysis
IAD	Institutional Analysis and Development
IEA	Integrated Environmental Assessment
IEA-org	International Energy Agency
IRENA	International Renewable Energy Agency
IV	Independent Variable
KW	Kilowatt (capacity)
kWh	Kilowatt-hour (energy)
LAI	Local Autonomy Index
LLUP	Local Land-Use Plan
MeteoSchweiz	Federal Office of Meteorology and Climatology
MOI	Mode of Interaction
MS	Multiple Streams
MW	Megawatt (capacity, 1 MW = 1'000 KW)
MWh	Megawatt-hour (energy, 1 MWh = 1'000 kWh)
NC	National Council
NCS	Network Characteristics Survey
NFA	Fiscal equalization scheme and task distribution between the Federation and the cantons
NGO	Nongovernmental Organization
NPM	New Public Management
PCS	Project Characteristics Survey
PET	Punctuated Equilibrium Theory
PM	Posterior Mass
PSE	Problem-Solving Effectiveness

List of abbreviations

PV	Photovoltaics
RAI	Regional Authority Index
RC	Rational Choice
RE	Renewable Energy
RQ	Research question
SE	Standard Error
SEVAL	Swiss Evaluation Society
SNA	Social Network Analysis
SÜL	Master Plan on the Transmission Grid
TW	Terawatt (capacity, 1 TW = 1'000'000'000 KW)
TWh	Terawatt-hour (energy, 1 TWh = 1'000'000'000 kWh)
VBS	Federal Department of Defense, Civil Protection and Sport
VCS	Swiss Transport and Environment Association
WE	Wind Energy
WMO-GL	Guideline of the World Meteorological Organization
WWF	World Wildlife Fund

Legal sources

ArG	Federal Act on Employment in Industries, Commerce and Trade, decision: 13.03.1964, state: 01.01.2011, SR 822.11
BauG AG	Construction law of the canton of AG, decision: 19.01.1993, state: 15.06.2021
BauG BE	Construction law of the canton of BE, decision: 09.06.1985, state: 01.03.2022
BGBM	Federal Act on the domestic market, decision: 06.10.1995, state: 01.01.2021, SR 943.02
BGG	Federal Supreme Court Act, decision: 17.06.2005, state: 01.07.2022, SR 173.110
BirrV	Ordinance on the provision of a temporary standby power plant in Birr, decision: 23.09.2022 state: 24.09.2022, SR 531.64
BV	Federal Constitution, decision: 18.04.1999, state: 13.02.2022, SR 101.0
BV-old	Federal Constitution of 1874, decision, 29.05.1874 state: 20.04.1999, not in force
EnFV	Ordinance on Promotion of Electricity Production from Renewable Sources, decision: 01.11.2017, state: 01.04.2022, SR 730.03
EnG	Energy Act, decision: 30.09.2016, state: 01.10.2022, SR 730.0
EnG-old	Energy Act of 1998, decision: 26.06.1998, state: 01.01.2017, not in force
EnV	Energy Ordinance, decision: 01.11.2017, state: 01.01.2022, SR 730.01
EnV-old	Energy Ordinance of 1998, decision: 07.12.1998, state: 01.01.2017, not in force
ESPOO	Espoo-Convention, ratified: 13.06.1996/16.09.1996, state: 23.10.2017, SR 0.814.06
FMG	Telecommunications Act, decision: 30.04.1997, state: 01.07.2021, SR 784.10
GschG	Federal Act on the Protection of Waters, decision: 24.01.1991, state: 01.01.2022, SR 814.20
JSG	Federal Act on Hunting and the Protection of Wild Mammals and Birds, decision: 20.06.1986, state: 01.01.2022, SR 922.0

List of abbreviations

KGSG	Federal Act on the Protection of Cultural Property in Armed Conflict, Catastrophes and in Emergencies, decision: 20.06.2014, state: 01.01.2016, SR 520.3
LFG	Federal Aviation Act, decision: 21.12.1948, state: 01.05.2022, SR 748
LSIG-GE	Law on the Organization of the Industrial Services of Geneva (SIG), decision: 05.10.1973, state: 26.01.2019
LSV	Noise Abatement Ordinance, decision: 15.12.1986, state: 01.07.2021, SR 814.41
MetG	Federal Act on Meteorology and Climatology, decision: 18.06.1999, state: 01.01.2007, SR 429.1
MG	Federal Military Act, decision: 03.02.1995, state: 01.01.2022, SR 510.10
NHG	Federal Act on the Protection of Nature and Cultural Heritage, decision: 01.07.1966, state: 01.01.2022, SR 451
NHV	Ordinance on the Protection of Nature and Cultural Heritage, decision: 16.01.1991, state: 01.06.2017, SR 451.1
PäV	Ordinance on Parks of National Importance, decision: 07.11.2007, state: 01.04.2018, SR 451.36
Ramsar	Ramsar-Conventions, <i>first convention</i> : ratified: 19.06.1975/16.01.1976, state: 07.07.2016, SR 0.451.45; <i>second convention</i> : ratified: 30.05.1984, state: 11.07.2016, SR 0.451.451
RPG	Federal Act on Spatial Planning, decision: 22.06.1979, state: 01.01.2019, SR 700.0
RVOG	Government and Administration Organization Act, decision: 21.03.1997 state: 02.12.2019, SR 172.010
StromVG	Electricity Supply Act, decision: 23.03.2007, state: 01.06.2021, SR 734.7
StSV	Heavy Current Ordinance, decision: 30.03.1994, state: 01.06.2019, SR 734.2
SwSV	Low Current Ordinance, decision: 30.03.1994, state: 20.04.2016, SR 734.1
UNESCO	Unesco-Convention, ratified: 19.06.1975/17.09.1975, state: 07.04.2020, SR 0.451.41
USG	Federal Act on the Protection of the Environment, decision: 07.10.1983, state: 01.01.2022, SR 814.01
UVPV	Ordinance on the Integrated Environmental Assessment, decision: 19.10.1988, state: 01.08.2022, SR 814.011

VBLN	Ordinance on the Federal Inventory of Landscapes and Natural Monuments, decision: 29.03.2017, state: 01.06.2017, SR 451.11
VBO	Federal Ordinance on the Designation of Organizations with a Right of Appeal in the Field of Environmental Protection or Nature and Cultural Heritage, decision: 27.06.1990, state: 01.06.2019, SR 814.076
VGG	Federal Administrative Court Act, decision: 17.06.2005, state: 01.03.2021, SR 173.32
VIL	Ordinance on Aviation Infrastructure, decision: 23.11.1994, state: 01.05.2022, SR 748.131.1
VISOS	Ordinance on the Federal Inventory of Swiss Valuable Sites of Local Character, decision: 13.11.2019, state: 01.05.2022, SR 451.12
VIVS	Ordinance on the Federal Inventory of Swiss Historic Routes of Transport, decision: 14.04.2010, state: 01.06.2017, SR 451.13
VpEA	Ordinance on the Planning Approval Procedure, decision: 02.02.2000, state: 01.07.2021, SR 734.25
VwVG	Federal Act on Administrative Procedure, decision: 20.12.1968, state: 01.07.2022, SR 172.021
WaG	Federal Act on Forest, decision: 04.10.1991, state: 01.01.2022, SR 921.0
WRG	Federal Act on the Utilization of Hydropower, decision: 22.12.1916, state: 01.01.2021, SR 721.80

