



Energy Turnaround
National Research Programme NRP 70



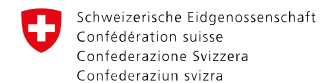
SWISS COMPETENCE CENTER for ENERGY RESEARCH
SUPPLY of ELECTRICITY

2nd Workshop: The Future of Swiss Hydropower

28.10.2016



In cooperation with the CTI



Swiss Confederation

Commission for Technology and Innovation CTI

Main Project Research Questions

1. What are the ***short-term operational*** options for Swiss hydro plants to cope with the volatile market environment?:
2. What are the ***long-term investment options*** for Swiss HP and how can ***uncertainty*** be accounted?
3. What are the ***regional impacts*** of these developments from a comprehensive ***sustainability perspective***?

Project Initiation: Stakeholder Workshop March 2015

WP1: HP Operation	Screening of Drivers and Uncertainties
WP2: HP Investment	
WP3: HP Sustainability	

	2014	2015				2016				2017				2018
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Joint Workshop Level	Short Term Drivers	Long Term Drivers	Institutional Setting											
WP1 Development	HP Single Model													
WP1/2 Application			Interface											
WP2 Development		Drivers, Scenarios and Data												
WP3 General	Relevance Analysis for:													
WP3 Assessments	Pilot GR Case VS Case TI													



Milestones

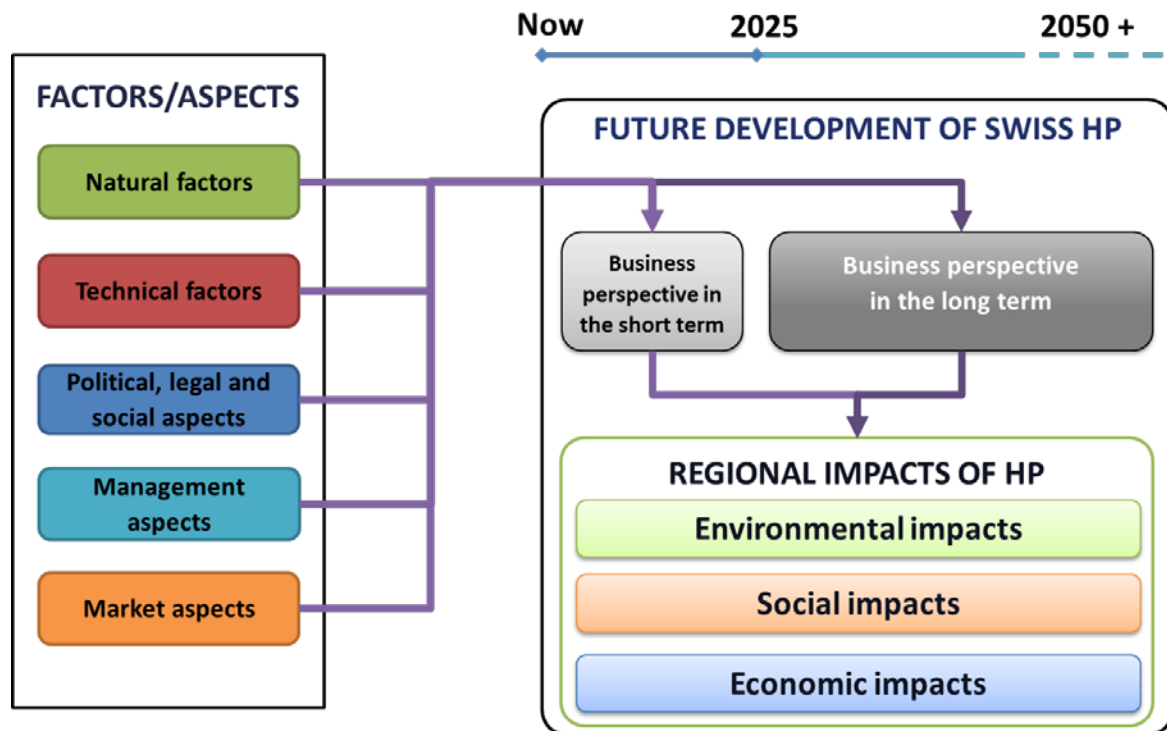
M1

Project Setup:
Identified Drivers, Interfaces
and Relevance Analysis

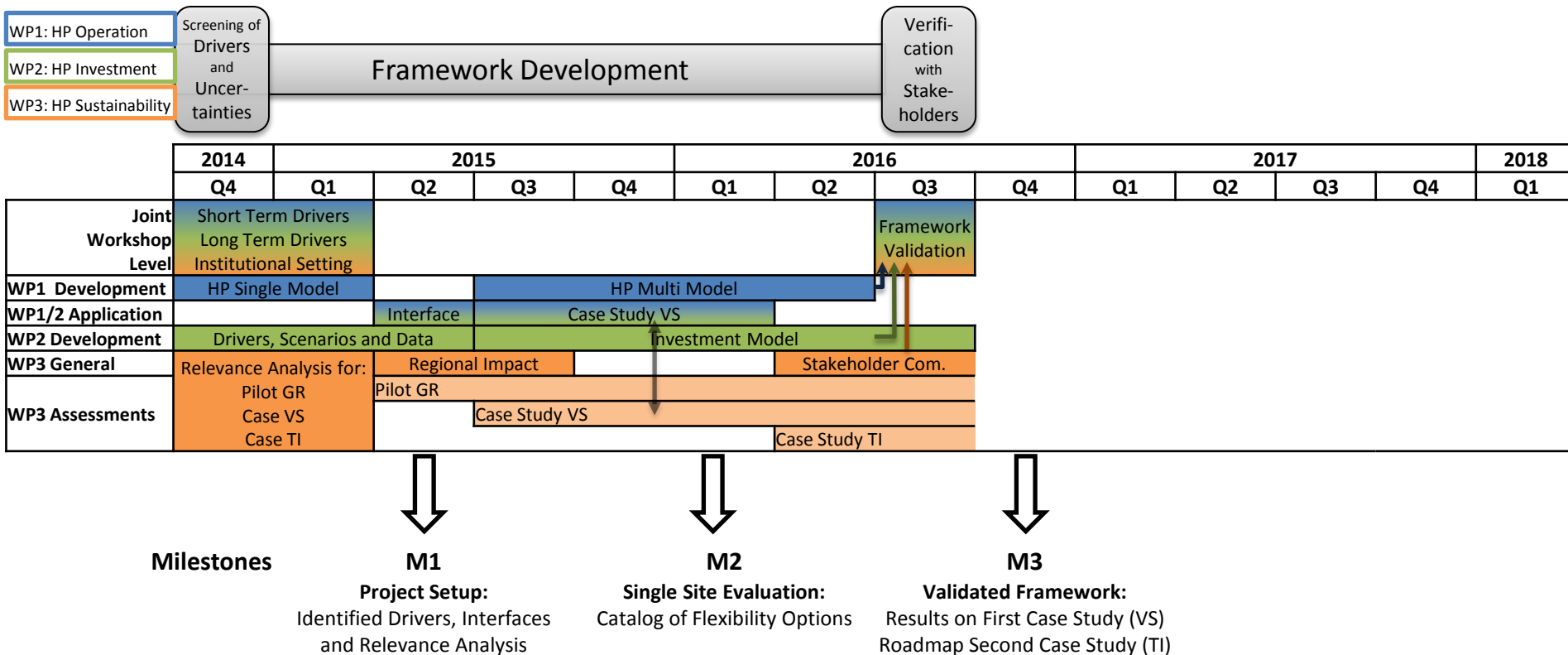
1st Workshop on Drivers and Uncertainties

12th March, Bern:

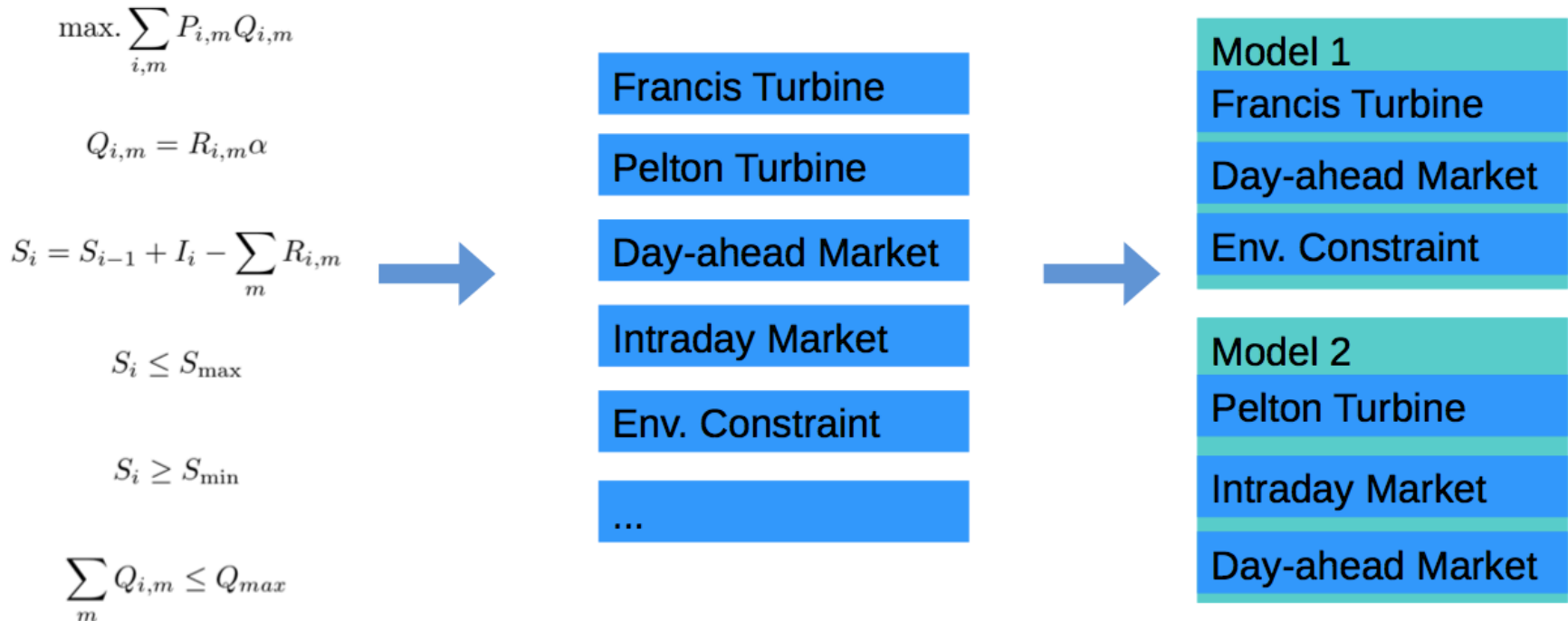
- Questionnaire on drivers and uncertainties
- 35 stakeholders from science (NRP, SCCERs), industry, NGOs, and administration
- External input from Scandinavia and Germany
- Discussion on short and long-term issues



Current Status: Model Framework and First Results



WP1 HP Operation: Modular Model



Development of flexible tool to evaluate market revenue potentials

WP2 Investment: Managing Flexibility



Drivers assessment
Optimization and NPV

Operational & managerial flexibility
ROA



Uncertainty/risk management:
Adapted ROA

WP3 Sustainability:

The project „HP Sustainability“ will provide

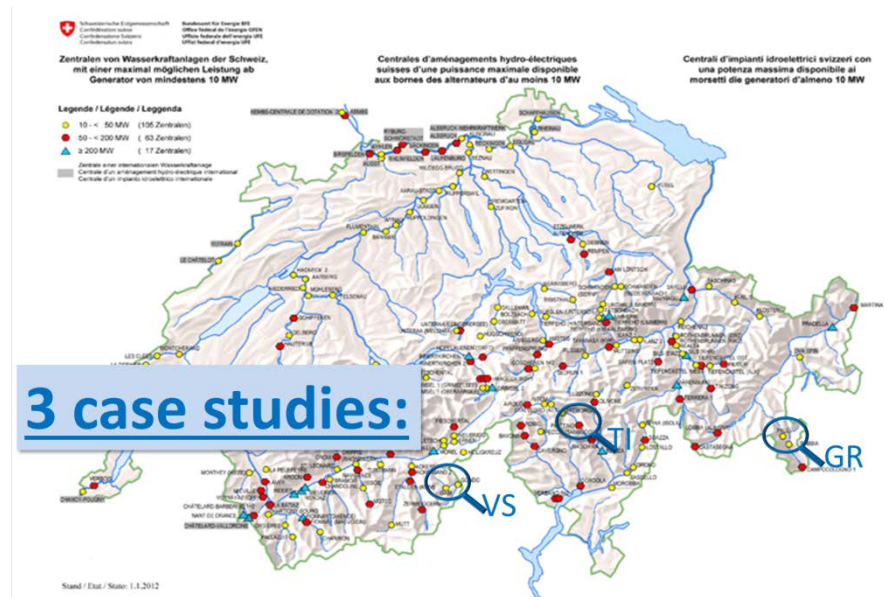
- A **generic framework** for regional sustainability assessment of HP undertakings and
- Its application to the **case studies** investigated in the other two projects of „HP Future“, as well as a **pilot case** in Valposchiavo:
 - Regional/project scale
 - Corporate level

ALPIQ

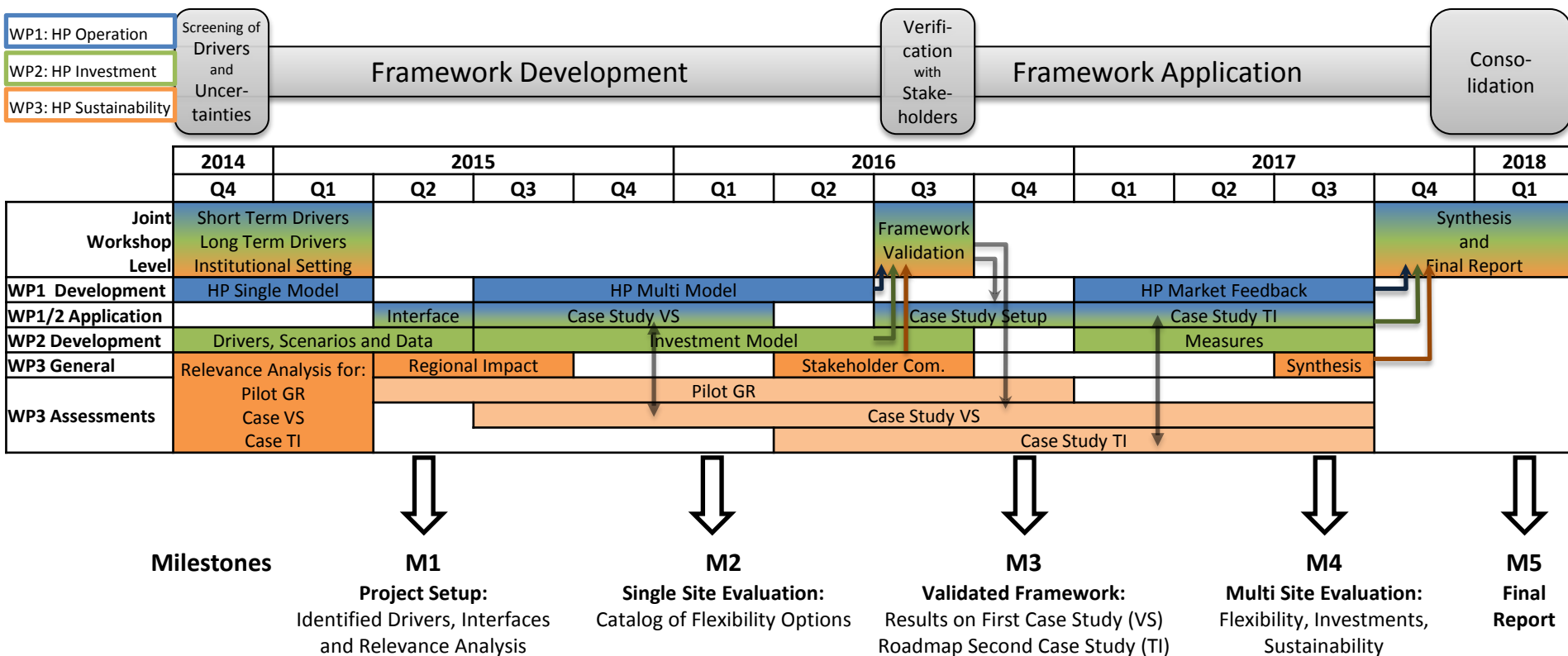
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REPOWER

- Close collaboration with the other two WPs



2018: Conclusions and Recommendations



Agenda

Program

13:00	<i>Registration and Coffee</i>
13:30	Welcome, Introduction and Goals for the Day
13:35	Market Opportunities and Challenges: Revenue Prospects in a Low Price Market
Schumann Weigt	<ul style="list-style-type: none">• Market prospects: How to optimize revenue?• Outlook into the next decade• Technology options
14:30	Break
14:45	Investment Management: Long Term Planning in a Short Term Market
Romerio Gaudard	<ul style="list-style-type: none">• Competitive pressure from storage and RES?• The value of managerial flexibility• Investment strategies under uncertainty
15:45	Break
16:00	Integrated Assessment: Hydropower in the Regional/Spatial Context
Hediger Voegeli	<ul style="list-style-type: none">• What have we learned so far?• Interplay of Market, Natural and Social Aspects• Governance issues (Water fees, Concessions)
17:00	Apero
