



# MANUMIX

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## 4th Learning Pillar: Evaluating innovation policy mixes: Insights from other countries and regions

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# Evaluating innovation policy mixes

## Introduction

- Benchmarking is a good tool for learning about other experiences in the policy arena.
- Examples of best practices in evaluating innovation policy-mixes are limited
- There are two main approaches: qualitative analyses and quantitative ones, each of which has its advantages and limitations
- We provide a first exploratory examples of both approaches

# Example: Qualitative approach

**The case:** evaluation of the interventions of Department for Business, Enterprise and Regulatory Reform – UK

## Purpose of the evaluation:

1. Explore the likely contribution of evaluated interventions to higher level objectives, specially to productivity growth and its drivers
2. Examine the degree to which the interventions were **competing or complementary** in terms of its contribution

## General approach and methodology

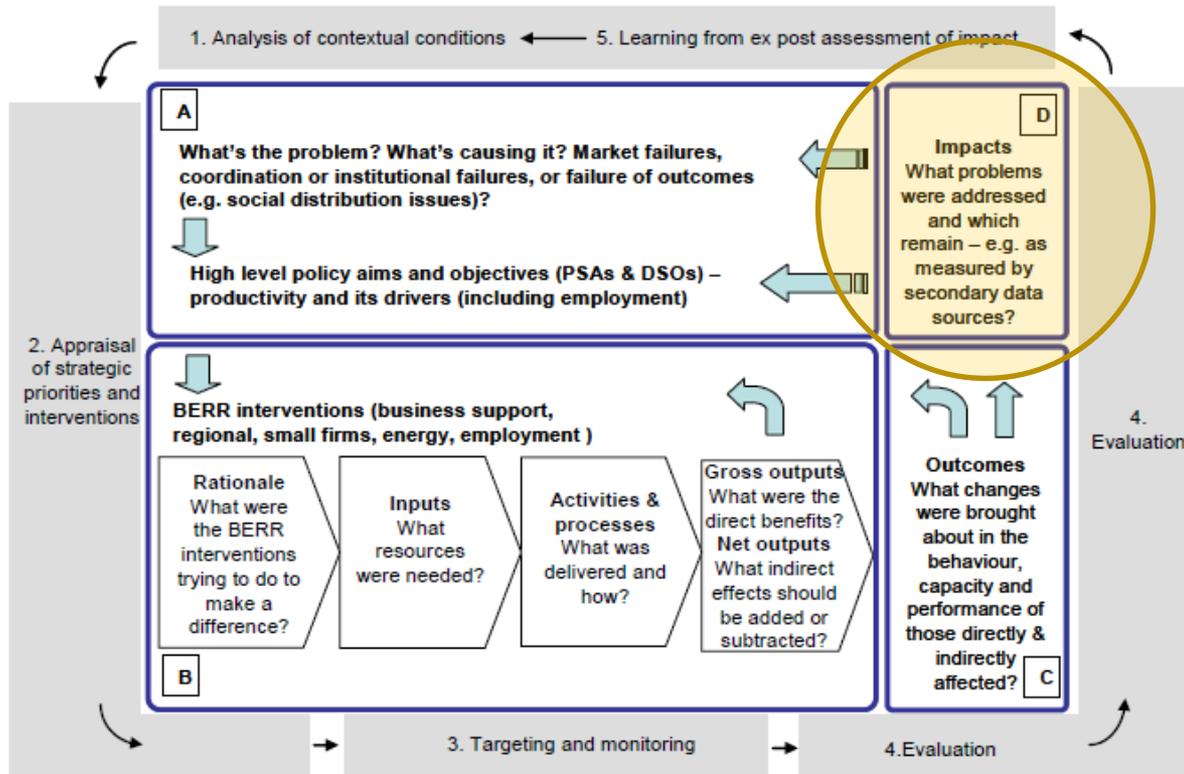
- Synthesis evaluation based on previous evaluations of programmes
  - Defining the logic framework of the interventions
  - Defining how to infer contribution to higher level objectives (review of research evidence about distinctive causal relationships between different drivers and productivity levels and growth, identify information gaps and use of substitute information –eg. Statistics- to infer contribution)
  - Using a synthesis template to collect and systematize information
  - Quantitative analysis to estimate contribution

# Example: Qualitative approach

Approach and methodology for the second objective (complementarity/competition)

Background: establishing a framework for interventions

Figure 1-2: A logic framework for BERR interventions

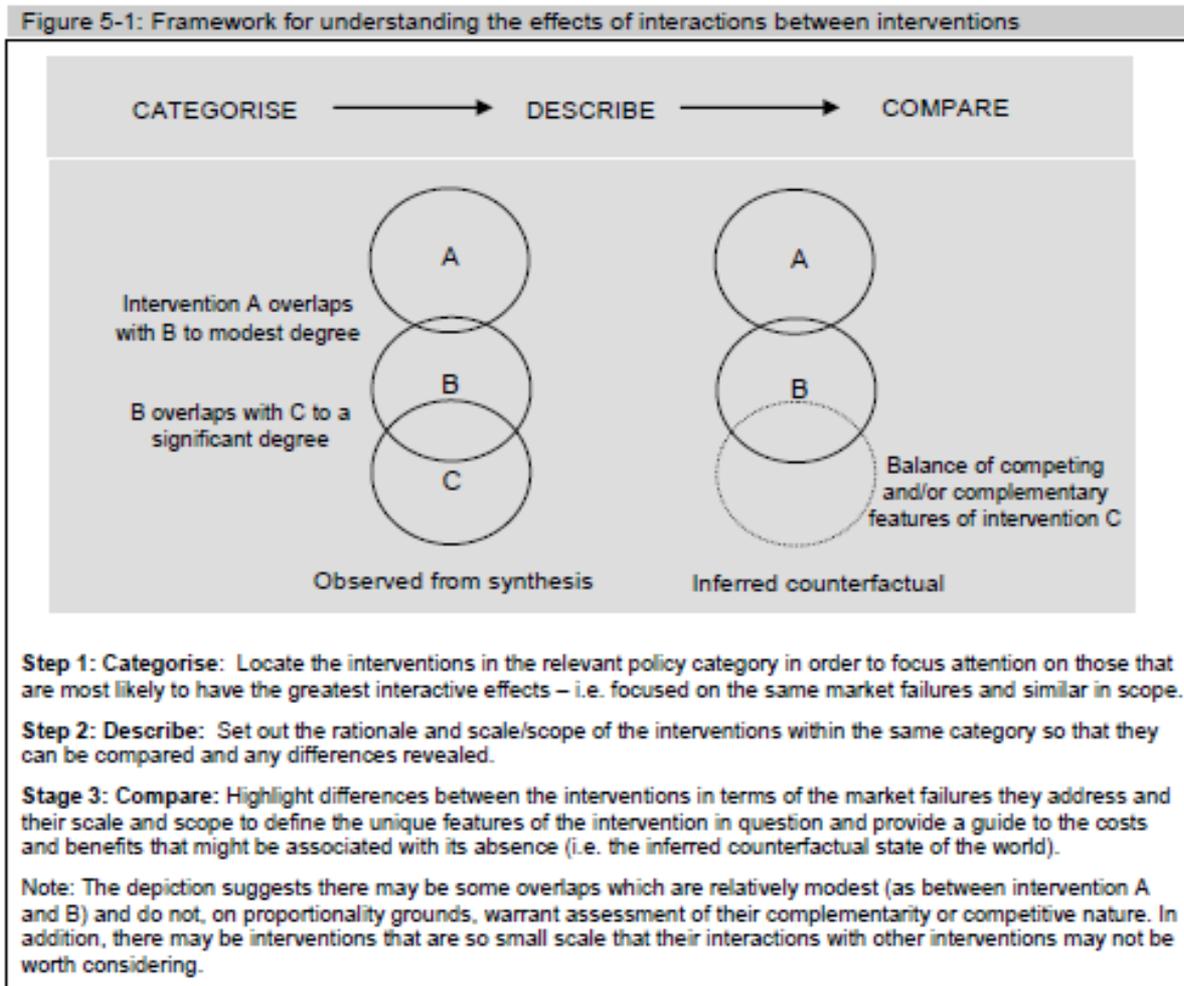


Source: SQW Consulting

# Example: Qualitative approach

Approach and methodology for the second objective (complementarity/competition)

## Framework and steps:



Source: Adapted from *Frontier Economics DTT (2006)*

# Example: Qualitative approach

## Approach and methodology for the second objective (complementarity/competition)

### Data collection and systematization: template to systematize previous evaluations

Table 3-1: The evaluation synthesis template

- A. **Coverage:** Intervention title and period
- B. **Rationale and objectives:** Interventions aligned with the relevant market failures, PSA targets, DSOs, productivity drivers and BERR categories<sup>33</sup> and described in terms of their target beneficiaries, spatial areas, sectors and/or technologies
- C. **Methodological approach:** Nature of the evaluation and period covered, research methods used and their assessed robustness
- D. **Spend and outputs:**
  - **Expenditure:** Total spend on the intervention – by the main spending department, other public sector sources and private sector – both for the period covered by the evaluation and the intervention as a whole
  - **Gross outputs:** Nature of gross outputs and their quantification
  - **Net outputs:** Nature of adjustments to gross outputs and their quantification – deadweight, displacement, substitution, multipliers, leakage, unforeseen effects, institutional and infrastructure effects – and quantification of the resultant net outputs
- E. **Outcomes:** Categories of primary outcomes generated (economic, human, social and environmental capital) and specific nature of the outcomes, their expected duration and their quantification
- F. **Impacts:** Extent to which the evaluations assessed:
  - the impacts of the intervention on contextual conditions and the form of any quantification of the impacts
  - effectiveness against objectives and provided estimates of cost-effectiveness and cost-benefit ratios
- G. **Competition or complementarity:** Extent to which the evaluated interventions were strategically and/or operationally competing with or complementary to other interventions
- H. **Generalising from the evaluation:** Methods and/or results that could have applications to other interventions
- I. **Evaluation recommendations:** The continuing rationale for the intervention and its delivery methods
- J. **Commentary:** Any other observations on the evaluations and their relevance to the synthesis study.

Source: SOW Consulting

# Example: Qualitative approach

Using a template to collect information from previous evaluations: example

Enter your initials in the first column		
Enter SQW reference number in second column		
	Data (numerical, coding or qualitative)	Commentary <i>When commentary is added for ease of reference please include in parentheses ( ) at the end of the text the page number(s) that the commentary relates to</i>
<b>A. Coverage</b>		
A. Name/title of the scheme/intervention	<i>A.: Title of the scheme as stated in the evaluation evidence</i>	
A2. Start of activity	<i>Please specify month and year e.g. Jan-08</i>	
A3. End of activity	<i>Please specify month and year e.g. Jan-08</i>	
<b>B. Rationale and Objectives</b>		
<b>B. Rationale</b>		
B.. Is a market failure rationale defined?	<i>B.a: Please select one of the coded options that best explain the market failure:</i> . Externalities/Spill-overs 2. Collaboration/Co-ordination failure 3. Public goods 4. Lack of awareness/underestimated benefits – imperfect market for information 5. Lack of awareness/underestimated benefits – information asymmetries 6. Inefficient market structures and barriers to entry 7. Uncertainty & risk 8. None stated 9. Other (please specify at B.2b)	
<b>B2. Target category intervention</b>		
B2.. Which primary PSA is the intervention aimed at?	<i>B2.a: Please select one of the coded options:</i> . Regional 2. Productivity 3. Employment 4. Business Success 5. Climate Change 6. Skills	<i>Note the evaluations have been pre-coded by BERR. The spreadsheet is available on the project portal site at ****. Check and review</i>

# Example: Qualitative approach

Using a template to collect information from previous evaluations: example

<p>B2.2. Which primary DSO is the intervention aimed at?</p>	<p><i>IF RELEVANT: please specify at B2.b the secondary PSA the intervention aimed at?</i></p> <p><b>B2.2a: Please select one of the coded options:</b></p> <ol style="list-style-type: none"> <li>1. DSO – Creation and growth of business and a strong enterprise economy across all regions</li> <li>2. DSO 2 – Better regulation</li> <li>3. DSO 3 – Free and fair markets</li> <li>4. DSO 4 – Clean safe and competitive energy</li> <li>5. DSO 5 – Manage energy liabilities effectively and responsibly</li> <li>6. DSO 6 – Government as shareholder</li> </ol> <p><i>IF RELEVANT: please specify at B2.2b the secondary DSO the intervention aimed at?</i></p>	<p><i>Note the evaluations have been pre-coded by BERR. The spreadsheet is available on the project portal site at ****. Check and review</i></p>
<p>B2.3. Which BERR category does the intervention sit within?</p>	<p><b>B2.3</b></p> <ul style="list-style-type: none"> <li>• Business support</li> <li>• Consumer competition policy</li> <li>• Employment relations</li> <li>• Energy policy</li> <li>• Europe and world trade</li> <li>• Public provision of services</li> <li>• Regional policy</li> <li>• Regulation</li> <li>• Small firms policy</li> </ul>	<p><i>Note the evaluations have been pre-coded by BERR. The spreadsheet is available on the project portal site at ****. Check and review</i></p>
<p>B2.4. Which productivity driver is the intervention seeking to influence</p>	<p><b>B2.4</b></p> <p><i>Given that a number of the schemes and also the evaluation reports will have been produced before productivity terminology was being used by Government, then interpretation of the evidence in the report may be required to select one of the productivity drivers listed below.</i></p> <ol style="list-style-type: none"> <li>1. Investment</li> <li>2. Skills</li> <li>3. Enterprise</li> <li>4. Innovation</li> <li>5. Competition</li> </ol>	<p><i>Note 5 of these were identified during the initial review. The spreadsheet is available on the project portal site at **</i></p> <p><i>Employment has been added as a sixth driver as a result of discussions with BERR</i></p> <p><i>Check and review</i></p>

# Example: Qualitative approach

Using a template to collect information from previous evaluations: example

G. Competition and complementarity		
G. Competition and complementarity		
G: Does the evaluation itself consider competition and complementarity between this and other interventions	<i>Ga: Please select one of the coded options</i> 1. Yes 2. No 3. Unclear	<i>Gb: Please provide further details</i>
G2. Does the evaluation provide information on beneficiaries progression to another scheme as a result of increased awareness?	<i>G2a: Please select one of the coded options</i> 1. Yes 2. No 3. Unclear	<i>G2b: Please provide further details</i>
G3. Does the evaluation provide information on progression as a result of the intervention increasing the beneficiaries capacity to participate in other schemes or programmes?	<i>G3a: Please select one of the coded options</i> 1. Yes 2. No 3. Unclear	<i>G.3b: Please provide further details</i>
G4. Does the evaluation provide information on the whether participation in the intervention has displaced/prevented participation in another intervention?	<i>G4a: Please select one of the coded options</i> 1. Yes 2. No 3. Unclear	<i>G4b: Please provide further details</i>
G5. Does the evaluation provide information on whether the intervention complements or displaces the deliverers' performance in other interventions?	<i>G5a: Please select one of the coded options</i> 1. Yes 2. No 3. Unclear	<i>G5b: Please provide further details</i>
G6. Based on additional evaluation evidence/prior knowledge, are there any indications of competition/complementarity with other interventions?	<i>Please provide a qualitative account of competition or complementarity with other interventions</i>	

# Example: Qualitative approach

Categorising interventions to analyse and draw conclusions from desk research

Table H-1 : Categorisation of interventions and the interactions between them

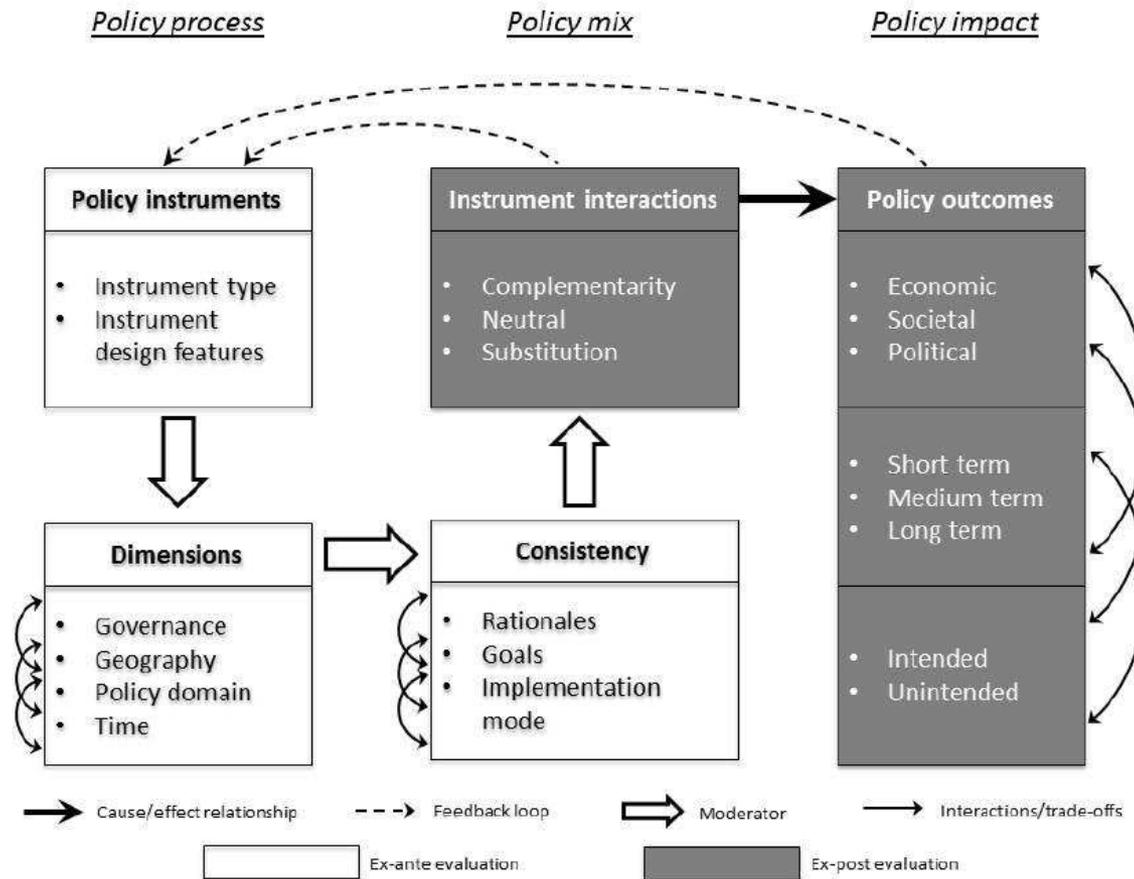
Intervention (and period evaluated)	Market failure(s)	Productivity drivers (and targeted scope)	Commentary or inference on interactions
<b>REGIONAL POLICY</b>			
RSA and SFIE (2000-04)	Lack of awareness, underestimated benefits – imperfect market for information Externalities and Information asymmetries	Enterprise (individual firms, primarily manufacturing, in Assisted Areas)	Switch from RSA to SFIE with advent of RDAs – no evidence available of competition or complementarity
Regional Supply Networks (1995-97)	Lack of awareness, underestimated benefits – imperfect market for information	Enterprise (individual SMEs – nationally)	Doubtful rationale and high displacement but not a function of competition with other services
RETEX initiative (1993-98)	Inefficient market structures and barriers to entry	Enterprise (wider effects within designated TTWAs)	Not clear what RETEX added to mainstream programmes
Regional Innovation Fund (1999-2002)	Inefficient market structures and barriers to entry	Innovation (wider economic effects in the regions from SMEs and start-ups)	New departure with advent of RDAs and focus on innovation
<b>SMALL FIRMS POLICY</b>			
Business Link (1995-2003)	Lack of awareness, underestimated benefits – information asymmetries plus institutional failures	Enterprise (individual SMEs & start ups national but delivered sub-regionally)	Support agencies integrating their services more and BL stimulated, rather than displaced private sector services
Small Firms Training Loans (1994-1998)	Externalities	Enterprise (individual businesses in the UK)	Small scale – unlikely to be significant interactions
Supply Chain Development and Management (1997-2001)	Lack of awareness, underestimated benefits – information asymmetries and imperfect information	Competition (groups of firms targeted at SMEs in the UK)	Indirect evidence from low deadweight and positive outcomes that likely to be a complementary initiative
Small Firms Loan Guarantee (1993-1997)	Lack of awareness/underestimated benefits – information asymmetries and imperfect information	Enterprise (UK SMEs)	Rational valid - remains a small firms financing problem – hence a complementary scheme
Company Rescue Scheme Pilots (2001-2002)	Collaboration/Co-ordination failure	Enterprise (firms in regions - focus on SMEs)	Small scale – unlikely to be significant interactions

# Example: Quantitative approach

- Quantitative approaches focus on the effectiveness of the interactions among different policy instruments (policy-mixes) and therefore seeks for assessing **consistency** among instruments
- Data is the main input for this approach, either from primary or secondary sources.
- The most common methodology is following a quasi-experimental approach by comparing beneficiaries of public programmes with a control group.
- This is the most suitable case when beneficiaries are firms, difficult to apply in the case of a limited number of beneficiaries (i.e. universities)
- This approach could be applied to individual evaluations or for looking at the instruments interactions (policy mix)
- Data availability is the main constraint for this method to be applied

# Example: Quantitative approach

## Framework for evaluating innovation policy mixes



# Example: Quantitative approach

Guerzoni & Raiteri, (2013)

**Policy mix:** Innovative Public procurement/ R&D subsidies to firms

**Data:** Survey conducted to European firms (2006-2008)

## Distinction of three types of companies:

- Beneficiaries ONLY of R&D grants
- Beneficiaries ONLY of PPI
- Beneficiaries of BOTH programmes

Treatment	Number of firms
R&D subsidies	1140
Innovative Procurement	573
R&D subsidies only	500
Innovative procurement only	341
Innovative Procurement and R&D subsidies	183

**Control variables:** Size, age, domestic or international company, sector, country.

Variables for measuring impacts in behaviour : R&D expenditure

# Example: Quantitative approach

Guerzoni & Raiteri, (2013)

## Results:

The number of firms that have increased their R&D investment and innovativeness degree (introduction of new product, process or service) is higher when receiving simultaneously both supports (i.e. 26% of firms in R&D increase)

INNOVATIVE PROCUREMENT		Sample	Treated	Controls	Difference	S.E.	T-stat
R&D_increase	Unmatched	0.561	0.399	0.161***	0.022	7.040	
	ATT	0.561	0.436	0.125***	0.033	3.71	
Innovativeness	Unmatched	0.217	0.109	0.107***	0.0159	6.760	
	ATT	0.217	0.135	0.081***	0.0256	3.18	

R&D SUBSIDIES		Sample	Treated	Controls	Difference	S.E.	T-stat
R&D_increase	Unmatched	0.493	0.404	0.0892***	0.0174	5.110	
	ATT	0.493	0.412	0.0813***	0.0252	3.22	
Innovativeness	Unmatched	0.142	0.118	0.0238*	0.0125	1.900	
	ATT	0.142	0.114	0.0275	0.0179	1.530	

R&D SUBSIDIES ONLY		Sample	Treated	Controls	Difference	S.E.	T-stat
R&D_increase	Unmatched	0.458	0.387	0.0714***	0.0256	2.790	
	ATT	0.459	0.4042	0.0539	0.0372	1.450	
Innovativeness	Unmatched	0.141	0.110	0.0311*	0.0179	1.740	
	ATT	0.141	0.104	0.0370	0.0268	1.380	

INNOVATIVE PROCUREMENT ONLY		Sample	Treated	Controls	Difference	S.E.	T-stat
R&D_increase	Unmatched	0.508	0.386	0.121***	0.0291	4.170	
	ATT	0.508	0.3869	0.120***	0.0430	2.81	
Innovativeness	Unmatched	0.201	0.105	0.0966***	0.0198	4.880	
	ATT	0.201	0.139	0.0616*	0.0323	1.91	

R&D SUBSIDIES and INNOVATIVE PROCUREMENT		Sample	Treated	Controls	Difference	S.E.	T-stat
R&D_increase	Unmatched	0.645	0.384	0.262***	0.0386	6.780	
	ATT	0.645	0.447	0.197***	0.0571	3.46	
Innovativeness	Unmatched	0.207	0.106	0.102***	0.0259	3.930	
	ATT	0.207	0.128	0.0792*	0.0431	1.84	

\*, \*\* and \*\*\* denote significance at the 10%, 5% and 1% level

# Reflections

- Each of the approaches (quantitative/ qualitative) leads to different results: qualitative broader conclusions, quantitative quantifies complementarity/ substitution of the interventions.
- A good approach is to combine both methodologies but questions about technical competencies and resources required might arise.

Which could be the approach to be explored first given your context?



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# Thank you!

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Questions/Comments welcome



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