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# Net Zero Innovation Portfolio – Flexibility Innovation Programme

## **Flex Markets Unlocked**

Information Day

13<sup>th</sup> July, 11am

  
Department for  
Business, Energy  
& Industrial Strategy

# Agenda

Item
Introduction and Housekeeping
Background to the Flexibility Innovation Programme
Policy Context
Programme Overview
Phase 1 - Competition
Phase 1 - Application Process
Phase 2 Information
Q&A

# Housekeeping

- This presentation will be published after the event on the [Flex Markets Unlocked Innovation Programme webpage](#).
- If you have questions about the programme and the application process, please type these into the **Q&A function** and we will endeavour to answer these at the end of the session
- Any questions asked in today's session that are judged to be of **material significance** will also be answered through the clarification question process
- Please note this event will **not** be recorded
- Please see the published competition guidance for all details on this innovation competition

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# Purpose of today



Provide an overview of the **Flex Markets Unlocked Innovation Programme – Phase 1 Competition**



Provide information on the application process

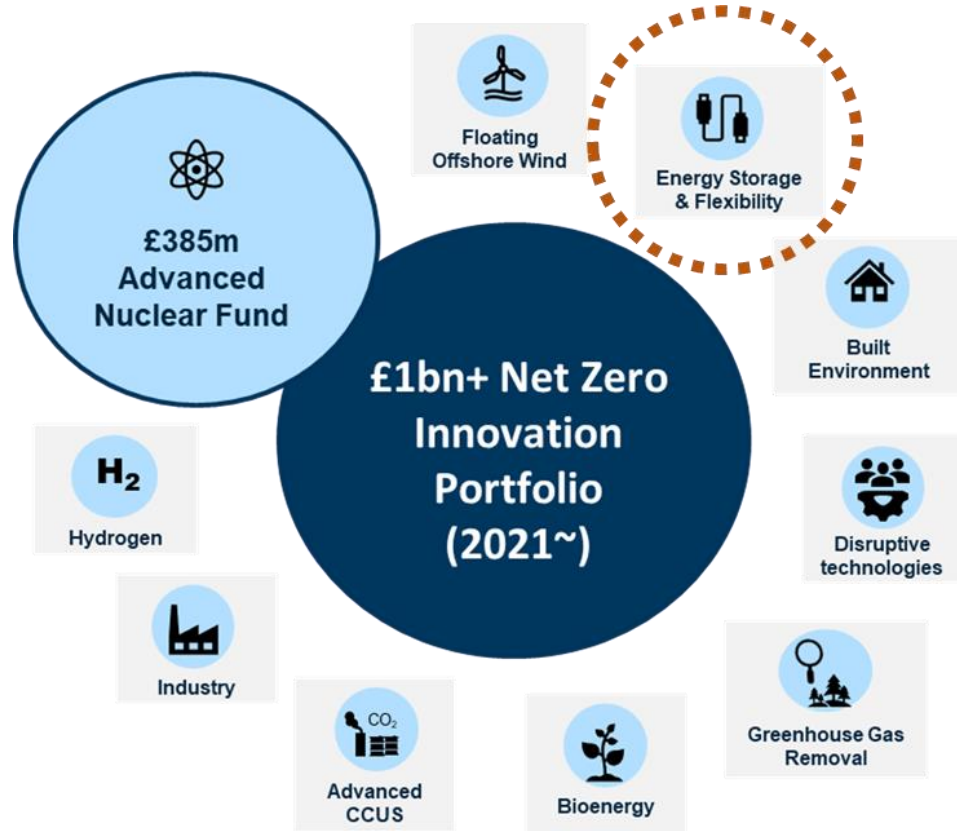


Provide an opportunity to ask questions

  
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# Background- NZIP Overview

## NET ZERO INNOVATION PORTFOLIO



Department for  
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# Flexibility Innovation Programme Overview

## Flexibility Innovation Programme (up to £65m)

Seeks to enable widespread electricity system flexibility through smart, flexible, secure, and accessible technologies and markets

### Integrating systems for Flexibility

- Interoperable Demand Side Response Programme (over £12.8m)
- V2X Innovation Programme (up to £12.6m)
- Inclusive Smart Solutions Programme (up to £2.75m)

### Data and Digitalisation

- Automatic Asset Registration (up to £2m)
- Energy System Digital Spine feasibility study (up to £204K)
- Smart Meter System based IoT Applications (Up to £1.8m)
- Smart Meter Energy Data Repository (Up to £1m)
- Non-Domestic Smarter Tariff Comparisons (up to £800K)

### Markets for Flexibility

- Alternative Energy Markets (up to £18m)
- Flexibility Markets Unlocked (up to £2.6m)

## Longer Duration Energy Storage Programme (over £69m)

Aims to accelerate commercialisation of innovative longer duration energy storage projects

### Stream 1

- Focuses on progressing projects to TRL 9
- Actual demonstrations in operational environments
- Storage types: Electricity, thermal and Power to X
- £11m in the form of grants.

### Stream 2

- Focuses on progressing projects to TRL 6
- System prototypes in relevant or operational environments
- Storage types: Electricity, thermal and Power to X
- Up to £9.45m for each project in the form of SBRI contracts.

Cross programme engagement

Knowledge sharing

International leadership

Evaluation

Department for Business, Energy & Industrial Strategy

# Innovation Programme Progress



Keep informed [www.gov.uk/government/publications/flexibility-innovation](http://www.gov.uk/government/publications/flexibility-innovation)

# Background and Policy Context



## Barriers

- Low participation in major national markets due to **operational complexity**
- Difficulties in revenue stacking because **markets are not coordinated**
- Complicated market entry process particularly for smaller entrants, with **opportunities fragmented across several markets**



## Problem statement

The provision of distributed, small-scale flexibility is relatively untapped and there are challenges to realising its full system value; this value is **fragmented** across several markets that are **not fully standardised, coordinated or fully accessible** to this type of flexibility.



## Competition aim

Support the design and development of innovative technical solutions that can **enable system-wide coordination, standardisation and revenue stacking across multiple flexibility markets**, allowing a more diverse and competitive flexibility marketplace – unlocking flexibility.





# Other relevant work

This innovation competition builds and takes learnings from:

## ENA Open Networks Programme

- Aims to standardise and align processes to make connection to the networks easier
- Developed a common evaluation methodology
- Launch of primacy rules

## Previous Innovation Programmes

- Flexibility exchange demonstration competition (FleX) – supported the development and demonstration of innovative energy flexibility exchange solutions.
- Projects demonstrated the benefits of a neutral market facilitator within specific market elements and locations

## Ofgem’s “The Future of Distributed Flexibility” Call for Input and Technical Annex

- Seeks views on a technical solution- a common digital energy infrastructure- to deliver information provision, market coordination of operations and access, and trust and governance.
- The overarching aim is to tackle these issues and ensure that DER and CER are actively engaged in all GB energy markets.

# Programme Overview

The Flex Markets Unlocked Innovation Programme, of up to £2.6 million, aims to support the design and development of innovative technical solutions that can facilitate system-wide coordination, standardisation, and revenue stacking across multiple flexibility markets (markets within which flexibility can be bought or sold). This will allow a more diverse and competitive marketplace, unlocking flexibility.

## Phase 1 – Feasibility Studies

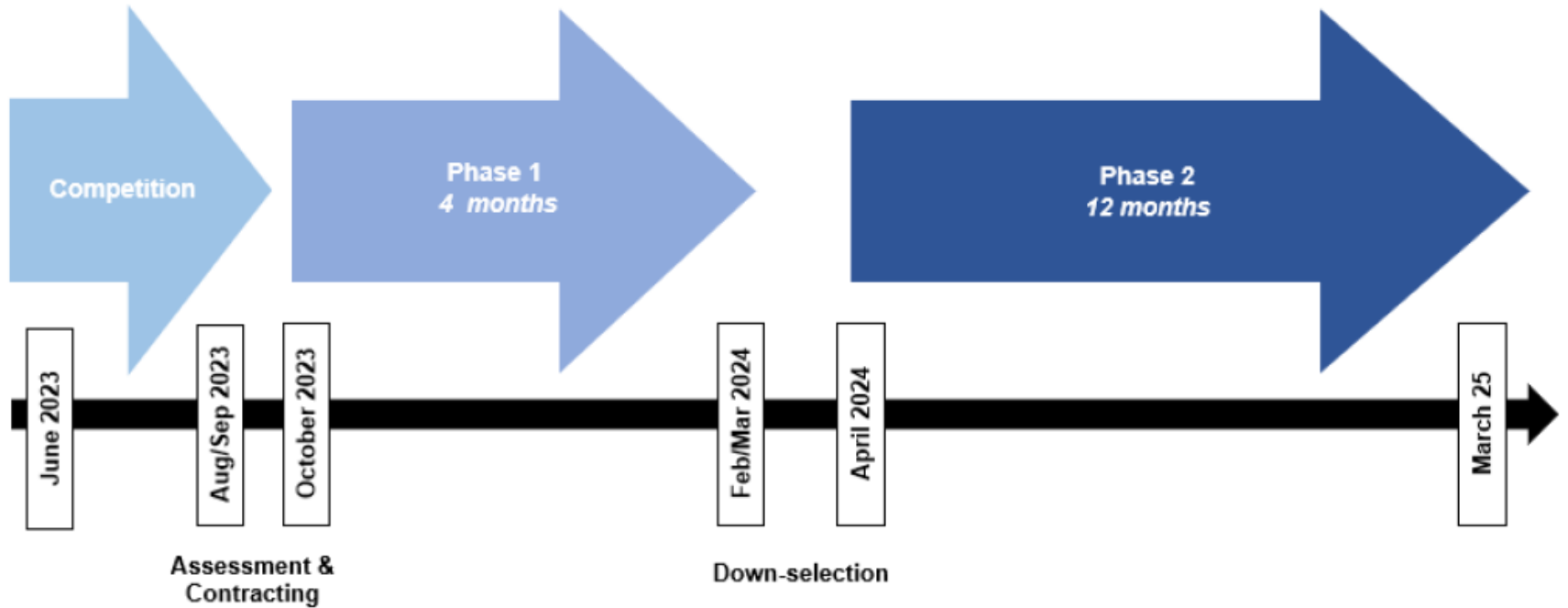
- Feasibility studies to develop robust technical specifications for proposed technical solutions
- **No. projects:** 3
- **Funding route:** SBRI
- **Length:** 4 months
- **Funding amount:** £200,000 / project



## Phase 2 – Development and Delivery

- Development and delivery of a proof-of-concept technical solution, demonstrating its core functionalities and capabilities in a simulated trial environment.
- **No. projects:** 1
- **Funding route:** SBRI
- **Length:** 12 months
- **Funding amount:** £2 million

# Programme Structure



# Phase 1 - Aims and Objectives

*Up to £600,000 SBRI funding, anticipate funding up to 3 projects*

**Aim:** Feasibility studies to develop robust technical specifications for proposed technical solutions that meet the four key outcomes set out above.

## **Objectives:**

- Define the technical, user-centric solution and produce a technical specification for the proposed solution which meets the four key outcomes.
- Assess the relevant constraints, dependencies, and enablers for the successful adoption of the technical solution.
- Assess how the solution fits within the wider context, with any existing infrastructure to standardise/coordinate markets, and any existing work (including innovation) on digital infrastructure for the energy system.
- Demonstrate the value of the technical solution outlining the expected costs and benefits.
- Outline suggested governance, enduring business models and delivery routes for the technical solution
- Engage with relevant stakeholders to define the technical solution, including those working on initiatives and projects of relevance to this competition



# Phase 1 - Scope

Projects in scope for this competition are those which: design, develop and demonstrate technical solutions which deliver on the four outcomes

- 1 Information transparency:** enabling greater visibility of asset, product and market data for all market participants
- 2 Market access:** enable improved access to flexibility markets via common and streamlined processes
- 3 Market coordination:** improvement of operational efficiency by providing mechanisms to coordinate across multiple markets
- 4 Trusted governance:** enabling transparency in decision-making and governance, fostering trust in the marketplace

# Phase 1 - Scope

Projects in scope for this competition are those which: deliver on the four outcomes across multiple markets, are innovative and introduce new functionality, build on and take note of wider work, are user centred, are scalable, and that share learnings.

<p><b><u>Markets:</u></b> Solutions should cover multiple markets (3 or more) including at least one from each market category: the <b>(1) wholesale market / balancing mechanism, (2) national markets and (3) local markets</b></p>	<p><b><u>Net new functionality:</u></b> Projects in scope should introduce net new functionality, avoiding duplication of existing work (both innovation projects and desk-based studies), existing market participant systems and other innovation-funded work</p>
<p><b><u>User Centred:</u></b> Projects in scope should be proposing technical solutions which are user-centred and provide a trusted and robust user experience that reduces friction for all participants</p>	<p><b><u>Scalable:</u></b> The solution must be future proofed and of a <b>modular design</b> that permits <b>functionality</b> and use cases to be <b>added/removed</b> on a case-by-case basis.</p>
<p><b><u>Shared learnings:</u></b> Projects in scope are therefore those which will share outputs widely and publicly, actively disseminating knowledge and learnings. This includes providing publicly accessible outputs, and specifically, providing a <b>publicly published technical specification</b> as part of the final report deliverable</p>	

# Phase 1 – Out of Scope

The programme will not:

- Undertake decision making on questions such as institutional arrangement models for network and system operators.
- Undertake decision making on commercial or regulatory models in this area.
- Provide funding for wider market design considerations.
- Provide funding for technologies or approaches which are already widely or commercially deployed (in the UK or elsewhere) or which are very similar to those being tested in other existing or planned innovation projects.

# Phase 1 – Project Team & Expertise

Open to consortia with expertise in developing and building technical solutions. This could include, but is not limited to, organisations such as:

- IT strategy service providers
- Software developers
- Independent market platforms
- Flexibility service providers
- Energy market consultancies
- Academic institutions
- Standards organisations

Open to non-energy sector expertise that could bring relevant skills from other sectors to benefit and support the programme's aim and objectives.

## National markets:

Projects do not need to approach the ESO to be part of their consortium for Phase 1 applications.

## Local Markets:

A DNO may be a member of a consortium, but this is not a requirement. It is expected that more significant engagement and involvement of a DNO would be required in Phase 2.

## Wholesale Markets/Balancing Mechanism:

Where proposed technical solutions include the wholesale market, applicants should consider the most appropriate form of engagement with the power exchanges. Where proposed technical solutions include the Balancing Mechanism, the Department anticipates facilitating engagement with the ESO



# Architecture Development Frameworks

Internationally-recognised open architecture design frameworks such as TOGAF, ISO/IEC 42010.

- Iterative and agile development responsive to new information discovered during the development phase
- Enables assessment of how solution fits within the wider context.
- Clear set of deliverables documenting each stage i.e. TOGAF Architectural Artifacts <sup>1</sup>

Enduring artifacts of Technical Specification

- Encourage internationally-recognised standard artifacts such as SGAM diagrams <sup>2</sup>, IEC 62559 <sup>3</sup> Business/Functional UC diagrams etc.

<sup>1</sup>[The TOGAF Standard, Version 9.2 - Architectural Artifacts \(opengroup.org\)](#)

<sup>2</sup>[IEC SRD 63200 - SGAM basics - SyC Smart Energy](#)

<sup>3</sup>[IEC 62559 - use case methodology - SyC Smart Energy](#)



The eight stages of the Architecture Development Model. Source: [The Open Group](#)

# Phase 1 – SBRI

This innovation competition will be awarded using the Small Business Research Initiative (SBRI) approach.

- SBRI is a well-established pre-commercial procurement process that enables the development of innovative products and services in response to specific challenges faced by government departments and public sector bodies.
- SBRI is aimed at organisations working on research and development (R&D) of an innovative process, material, device, product, or service prior to commercialisation.
- Eligible project costs must reflect actual costs as ‘fair market value’ and suppliers are not permitted to include profit or contingency.
- Projects requesting funding for commercialisation activities are not eligible.
- The sharing of risks and benefits is an important aspect to the SBRI approach. Projects receive financial support and retain any intellectual property generated, with certain rights of use retained by the Authority.
- Project outputs are also expected to be shared widely and publicly



# Phase 2 Information

*Down selection of Phase 1 projects*

*Up to £2,000,000 funding, anticipate funding 1 project*

Aim: Development and delivery of a proof-of-concept technical solution, demonstrating its core functionalities and capabilities in a simulated trial environment.

Objectives:

- Produce an updated final technical specification for the technical solution.
- Develop, build and demonstrate the proof-of-concept technical solution which meets the four key outcomes, provides value and is scalable
- Demonstrate the proof-of-concept technical solution using simulated market data in a contained trial.
- Provide an updated assessment on the constraints, dependencies, and enablers to the successful adoption of the technical solution.
- Engage with relevant stakeholders and users to test the technical solution

  
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# Application Process – Phase 1

  
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# Application Timeline

Stage	Activity	Date
<b>Launch</b>	Competition opened to applicants	26 <sup>th</sup> June 2023
	Information event for potential applicants	13 <sup>th</sup> July 2023
	Deadline for applicant questions via e-mail	17 <sup>th</sup> July 2023, 2pm
	Publication of applicant questions and answers	w/c 24 <sup>th</sup> July 2023
<b>Apply</b>	Encouraged to submit registration online	25 <sup>th</sup> July 2023, 2pm
	Submit application online	<b>7<sup>th</sup> August 2023, 2pm</b>
<b>Assess</b>	Eligibility check, assessment and moderation	August 2023
<b>Award</b>	Notification of award	September 2023

# Clarification Questions

- Clarification questions related to the Phase 1 Competition Guidance Notes must be submitted to [FlexibilityInnovation@beis.gov.uk](mailto:FlexibilityInnovation@beis.gov.uk) by 17<sup>th</sup> July 2023, 2pm
- Questions after this deadline will **not** receive a response
- The Department will publish replies to any questions which, in our judgement, are of material significance through an online anonymised FAQ sheet during the **w/c 24<sup>th</sup> July 2023**
- **Please note:** any questions asked in today's session that are judged to be of **material significance** will be answered through this clarification question process



# Where to apply – Smart Survey

- In order to access the Phase 1 application form and submit an application, applicants should complete the [registration form](#).
- For further information we held a ‘how to apply’ information session last year. The slides and a recording of the session are available on the [Flexibility Innovation Programme page](#).

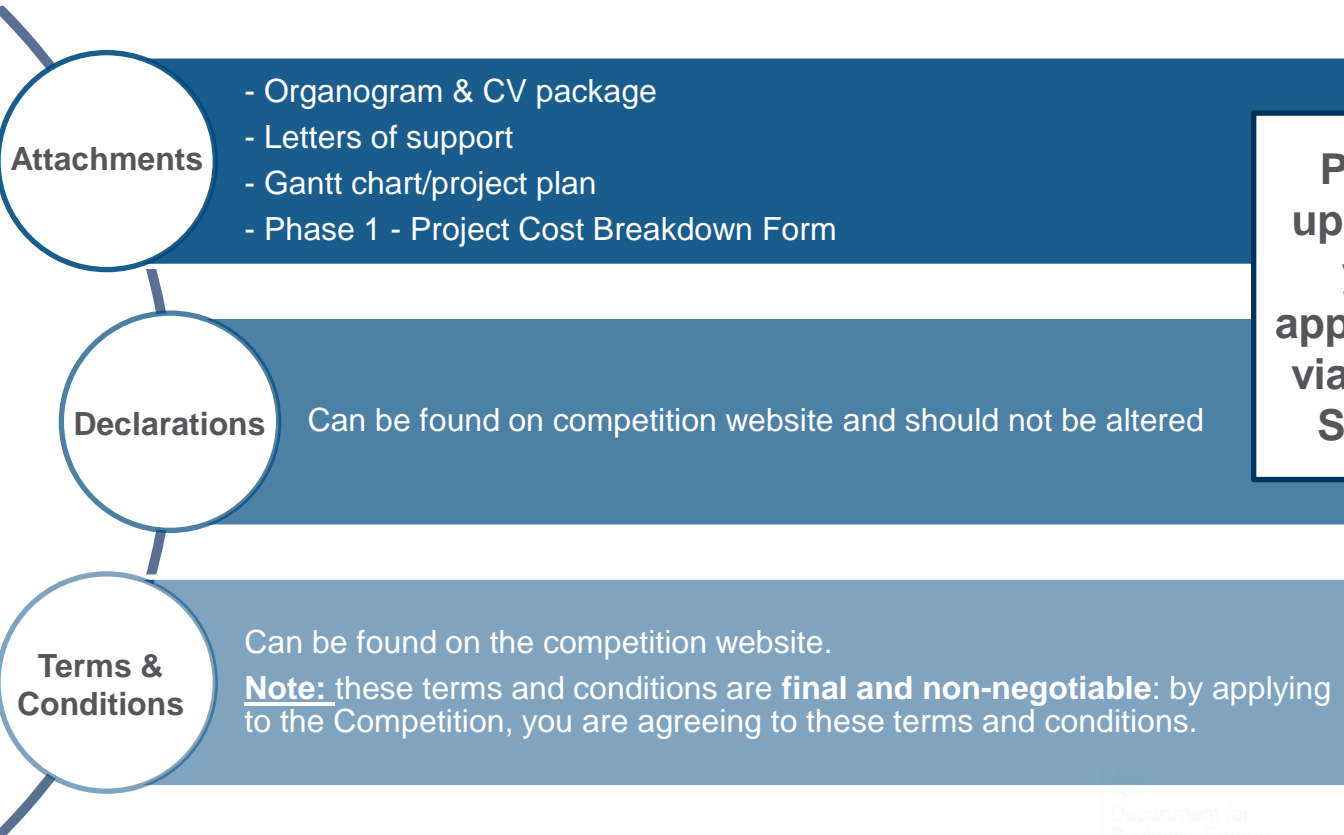
# Application Deadline

- **The deadline for submitting applications is 2pm 7<sup>th</sup> August**
- No submissions, additional material or amendments to applications will be accepted after this deadline.
- Applicants are advised to familiarise themselves with the Smart Survey before this deadline.
- Applicants should not rely on receiving Smart Survey support from the Department close to the deadline.
- **Reminder – all applications must be submitted via Smart Survey**



# Application Checklist

Please answer all questions on the application form fully.



Please upload to your application via Smart Survey

Department for Business, Energy & Industrial Strategy

# Finding collaboration partners

<https://flexibility-innovation-programme-collaboration.b2match.io/>

## Flexibility Innovation Programme Collaboration Platform

[Info](#) [How it works](#) [FAQ](#) [Contact](#)

### Flexibility Innovation Collaboration Platform

Find your collaboration partners to support your application.

The Flexibility Innovation Programme, which forms part of the [Net Zero Innovation Portfolio](#) (NZIP) looks to support innovative solutions to enable large-scale widespread electricity system flexibility

This match-making platform brings together organisations to connect and collaborate, in order to support the development of collaborative applications under the Flexibility Innovation Programme.

This platform enables you to view other individuals interested in applying to innovation activity under the Flexibility Innovation Programme, and request virtual meetings with potential collaboration partners.

United Kingdom

Flexibility Innovation Programme Collaboration Platform

Register now

Open until 31 July 2023

#### LOCATION

United Kingdom

#### ORGANISED BY



Department for  
Energy Security  
& Net Zero

#### PARTICIPANTS

United Kingdom

172

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# Q&A

  
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# Thank you for listening

flexibilityinnovation@beis.gov.uk

<https://www.gov.uk/government/publications/flex-markets-unlocked-innovation-programme>

  
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