



Forestry Commission Scotland
Coimisean na Coilltearachd Alba



Renewable Energy on the National Forest Estate

Wind Generation Schemes

A Guide to Community Options

July 2012

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FCS – Working with Developers

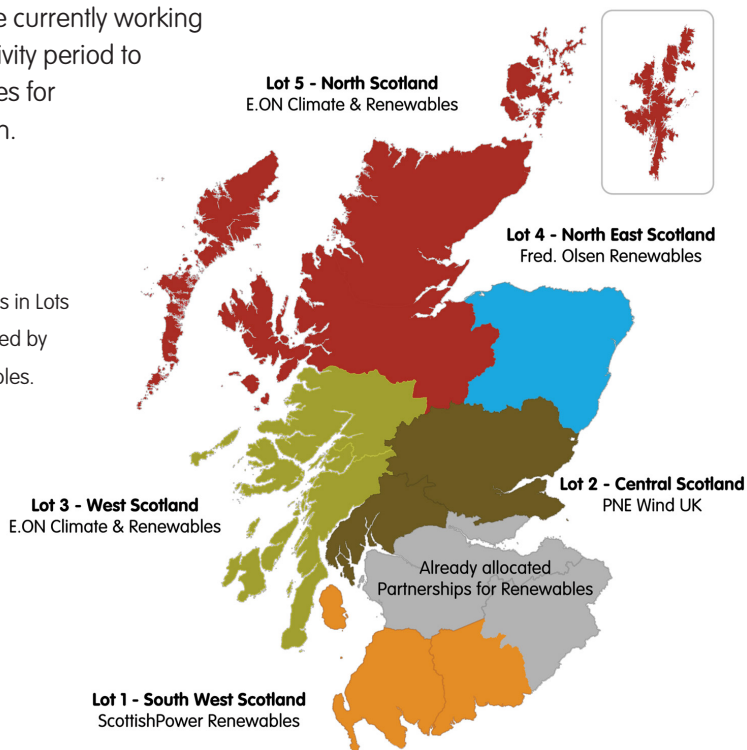
FCS is working with a number of companies to develop wind energy projects on the land which we manage on behalf of Scottish Ministers. We have been through a comprehensive procurement process to ensure we are working with competent and professional Developers.

For these new wind developments we are working with ScottishPower Renewables (SPR), PNE Wind UK (PNE), Fred Olsen Renewables (FOR) and EON Climate & Renewables (EON) (see map) as well as Partnerships for Renewables (PfR).

FCS divided the land which we manage into 5 “Lots” to be prospected. ScottishPower Renewables were awarded Lot 1 and the right to develop schemes of less than 5MW in Lots 1-5. PfR is already working in the Borders and Central belt.

The Developers are currently working through the exclusivity period to identify suitable sites for further investigation.

Schemes of 5MW or less in Lots 1, 2, 3, 4 and 5 developed by ScottishPower Renewables.



What is being considered?

The Developers are looking for sites across Scotland on which to site wind turbines. They take account of environmental information, aviation restrictions, connection to the National Grid and many other factors.

These projects can vary in size, from a scheme less than 2MW, to a major wind energy development.

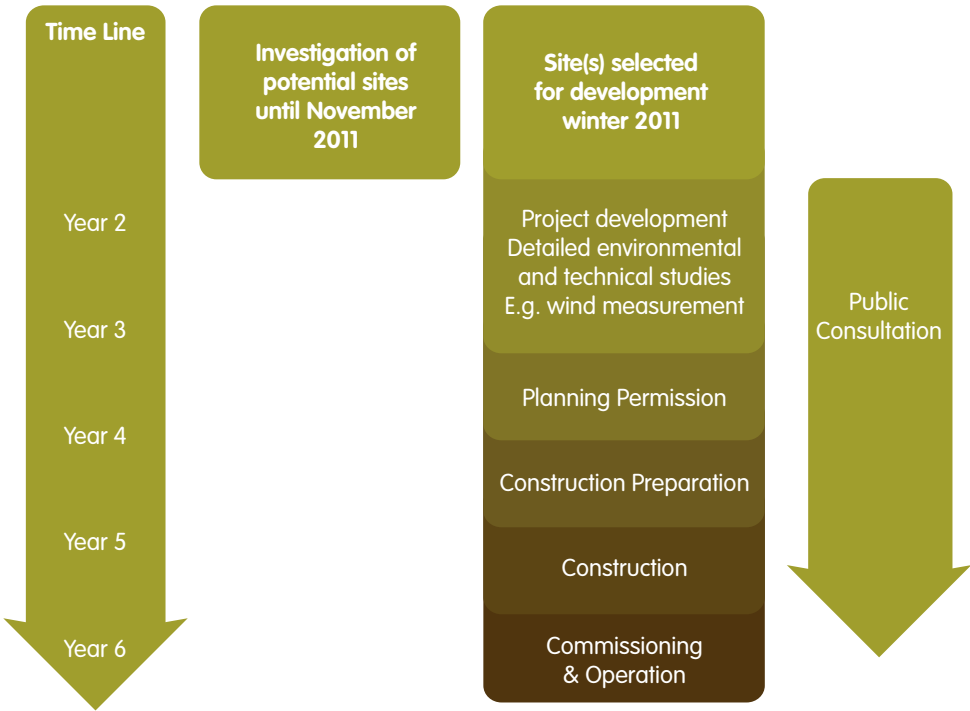
Once a site is selected, a full environmental assessment is carried out, which is then submitted in the Planning Application to the relevant Authority for a decision.

It can take more than three years to design, consent and construct even the simplest commercial scale wind site.





Indicative Timeline of Development



Community investment opportunities

A range of opportunities are available for Communities:

- Where Developers are taking forward projects on land managed by Forestry Commission Scotland, Communities are offered a leading-edge Community Benefit payment of £5,000 per MW of installed capacity of the renewables scheme each year. This guaranteed payment is index-linked. See option A on pages 14-19 for more details.
- Where Developers are taking forward projects on land managed by Forestry Commission Scotland, there is also an option for Communities to invest in the project. See option B on pages 14-19 for more details.
- On sites not selected by Developers, Communities may apply to lease land for their own renewable energy developments through the National Forest Land Scheme. See option C on pages 14-19 for more details.

To help Communities understand these opportunities, illustrations of costs, income and possible returns are set out on pages 7 - 13 (but please also see disclaimer on page 21).

Example of Community options based on a 1.5MW and a 20MW scheme for comparison.



The capital cost of any development depends upon project size.

This table provides an indication of the relationship between capital costs and project size for illustrative purposes only. Project costs can vary significantly and any Community developing a project should take their own independent advice.

Typical capital cost of a 1.5MW scheme = £1.8m - £2.6m

Typical capital cost of a 20MW scheme = £28m - £36m

Source: Renewable UK Onshore Costs / Benefits Study – Nov 2010



Example 1: 1.5MW scheme

Example costs

- A typical 1.5MW scheme will cost between £1.8m and £2.6m.
- This is based on 1 x 1.5MW turbine.
- Assuming a rounded £2.2m total, costs can be broken down further into the categories shown (values are indicative only and vary on a case by case basis).

Source: Typical costs provided by Developers

Development and Project Management £0.1m
Grid Connection £0.2m
Electrical and Mechanical Plant £0.3m
Turbines and Construction £1.6m

Eligibility for Feed-in Tariffs

The UK Government introduced Feed-in Tariffs (FiTs) in 2010 to help increase the level of renewable energy being generated. Feed-in Tariffs are payments for renewable energy generated by schemes up to 5MW in size.

The FiTs give financial benefits:

- A payment for all the electricity you produce, even if you use it yourself (Generation Tariff)
- Additional bonus payments for any electricity you export into the grid (Export Tariff).

Most forms of renewable electricity generation are eligible for the FiTs and a range of FiTs are payable depending on the size of the scheme. For small scale wind schemes, the FiTs are fixed for 20 years (indexed to RPI).

Feed-in Tariffs – revenue

This table shows the additional revenue possible from FiTs

2011 rates Effective 01/08/11	Export Tariff	Generation Tariff	TOTAL
15 - 100kW	3.1p/kWh	25.3p/kWh	28.4p/kWh
>100 - 500kW	3.1p/kWh	19.7p/kWh	22.8p/kWh
>500kW - 1.5MW	3.1p/kWh	9.9p/kWh	13.0p/kWh
>1.5MW - 5MW	3.1p/kWh	4.7p/kWh	7.8p/kWh

(NB: 13.0p/kWh = £130/MWh)
The application for FiT payments has to be approved by the regulator, then is fixed and index-linked, but future rates are currently under review by the UK Government and may decrease.

Source: Ofgem (Energy Regulator) Guidance on Feed-in Tariff Scheme
<http://www.ofgem.gov.uk>

Further information:

Energy Saving Trust – www.energysavingtrust.org.uk

Carbon Trust – www.carbontrust.co.uk

1.5MW wind scheme overview

For a 1.5MW scheme, this table shows indicative energy production and earning potential.

Source: UK Govt Feed-in Tariff tables and typical Developer costs

Note: Figures have been rounded for illustrative purposes

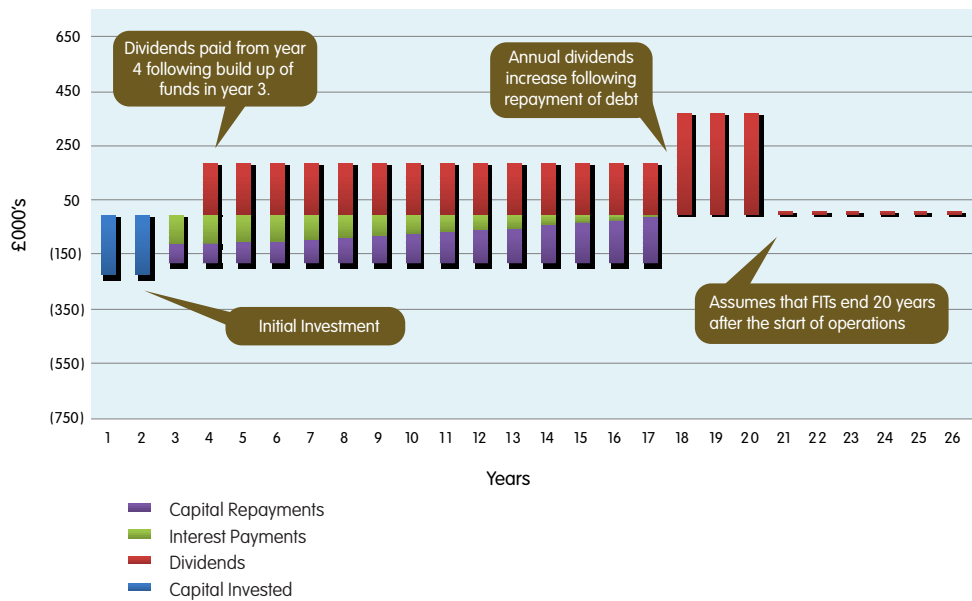
Turbine Size	1 x 1.5 = 1.5MW
Capital Cost estimate	£22.2m
Capacity Factor (% of the maximum potential output)	27.5%
Annual Energy Production (1.5MW x 24hrs x 365days per year x 27.5%)	3,600 MWh
Generation Tariff	£99/MWh
Export Tariff	£31/MWh
Annual Gross Income per year i.e. 3614 x (99 + 31)	£469,800
Typical operating Cost per year	£110,000



Indicative profile of cash flow – 1.5MW wind scheme

(Assumes 25% Equity investment in £2.2m scheme)

Investment and Revenues



The cash flow graph is for illustrative purposes only. Project revenues and returns are dependent on site specific capital and operating costs, wind speed, operational performance and funding terms available.

The illustration assumes qualification for FITs. The potential impact of Electricity Market Reform and other potential changes to renewable energy support schemes have not been considered here.

Example 2: 20MW scheme

Example costs

- A typical 20MW scheme will cost between £28m and £36m.
- This is based on 10 x 2MW turbines.
- Assuming a rounded £32m total, costs can be broken down further into the categories shown (values are indicative only and vary on a case by case basis).

Source: Typical costs provided by Developers

Development and Project Management £1.6m
Grid connection £3.2m
Civil construction £4.8m
Electrical and Mechanical Plant, including turbines £22.4m

20MW wind scheme overview

For a 20MW scheme, this table shows indicative energy production and earning potential.

Source: Renewable UK 'Onshore Costs / Benefits Study – Nov 2010'

Note: Figures have been rounded for illustrative purposes

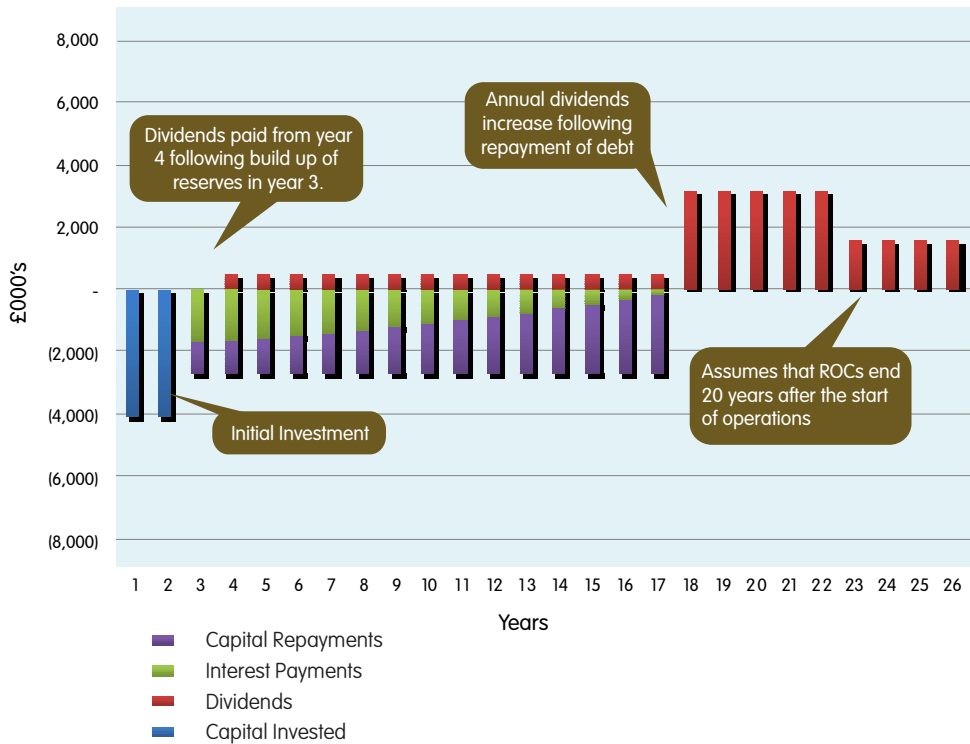
* A Renewables Obligation Certificate (ROC) is a green certificate issued to an accredited generator for eligible renewable electricity generated within the United Kingdom and supplied to customers within the United Kingdom by a licensed electricity supplier.

Turbine Size	10 x 2 = 20MW
Capital Cost estimate	£32m
Capacity Factor (% of the maximum potential output)	27.5%
Annual Energy Production (20MW x 24hrs x 365days per year x 27.5%)	48,180 MWh
Renewable Obligation Certificate* (ROC) income	£40/MWh
Sale of electricity	£40/MWh
Annual Gross Income per year i.e. 48,180 x (40+40)	£3.85m
Typical operating Cost per year	£980,000

Indicative profile of cash flow – 20MW wind scheme

(Assumes 25% Equity investment in £32m scheme)

Investment and Revenues



The cash flow graph is for illustrative purposes only. Project revenues and returns are dependent on site specific capital and operating costs, wind speed, operational performance and funding terms available.

The illustration assumes qualification for ROCs. The potential impact of Electricity Market Reform and the potential re-banding of ROCs have not been considered here.

How can a Community Group get involved?

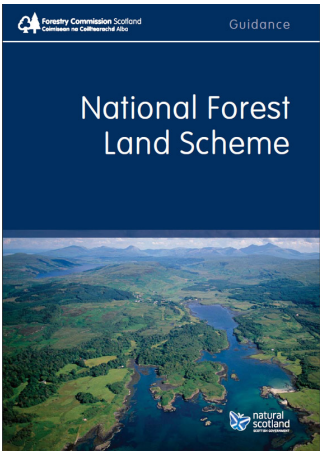
The FCS renewables programme is designed to ensure that Community Groups can benefit from these developments. This is a new opportunity for Community Groups affected by developments to receive a leading-edge payment from renewables Developers.

STEP 1 – Define your geographical boundary, to show that you are connected to the development

The rules to define a “Community Group” come from the National Forest Land Scheme, see page 12 – [click here to view](#).

A Community Group should be properly constituted, geographically defined and situated by, near to, or on the land proposed for development.

Existing geographical boundaries that can help with this include: Community council areas, postcode units etc. The Scottish Government has developed a Rural Community Mapping Tool to assist Communities: [link](#)



There are three options available to Community Groups wishing to get involved in renewables on the National Forest Estate:



* Only on sites not selected by Developers and under the National Forest Land Scheme.

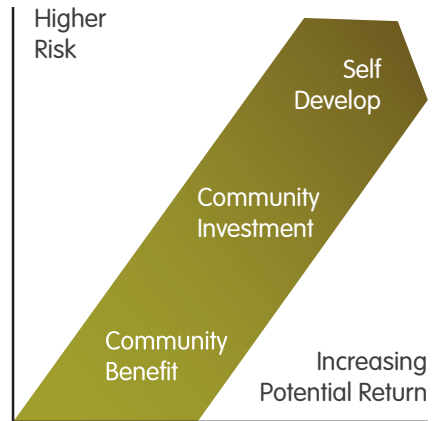
STEP 2 – Decide the level of risk you are willing to take

This chart shows the relationship between risk and potential return for Community Groups participating in these wind projects.

Simply taking the Community Payment (the £5,000 per MW installed capacity annual payment) is guaranteed to the Community, so means very low risk.

Community investment in a project means higher risk but has the opportunity for a higher return.

Self development is likely to attract the highest risk.



A: Community Benefit Payment –

Site on FCS land selected and committed to by Developer after site investigations.

- **Community action** – register an interest with the Developer, preferably before scheme receives planning consent. Payments can be made only to Community Groups which are properly constituted.
- Once the scheme is built, Developer pays an agreed sum of £5,000* per MW of installed capacity of the renewables scheme each year. This is a guaranteed payment regardless of other options chosen, shared between Communities affected by the development.
- This is a conventional benefit payment and is simply paid to the registered Community Group, or shared out if there is more than one, on an annual basis.
- No capital outlay is required.

* Index linked

B: Investment in a Developer's scheme

Site on FCS land selected and committed to by Developer after site investigations.

- **Community action** – register an interest with the Developer before the scheme receives planning consent.
- Investment – the Community can use its own money to invest in a project so that it has a stake in the scheme.
- Investments are permitted only by the eligible and properly constituted Community Groups, as well as FCS, not by individuals.
- A stake in the project is possible – up to an agreed maximum and within agreed timescales. The stake will not include voting rights. Equity and participation limits, and opportunities to convert Community Benefit payments into a stake, vary between Lots – please contact Forest Renewables (see page 20) for details.
- Able to benefit from the Developer's expertise and knowledge.
- Higher risk approach but higher earning potential.

C. Self Develop – through the National Forest Land Scheme

This is available **only** on sites that FCS has decided not to take forward after site investigations .

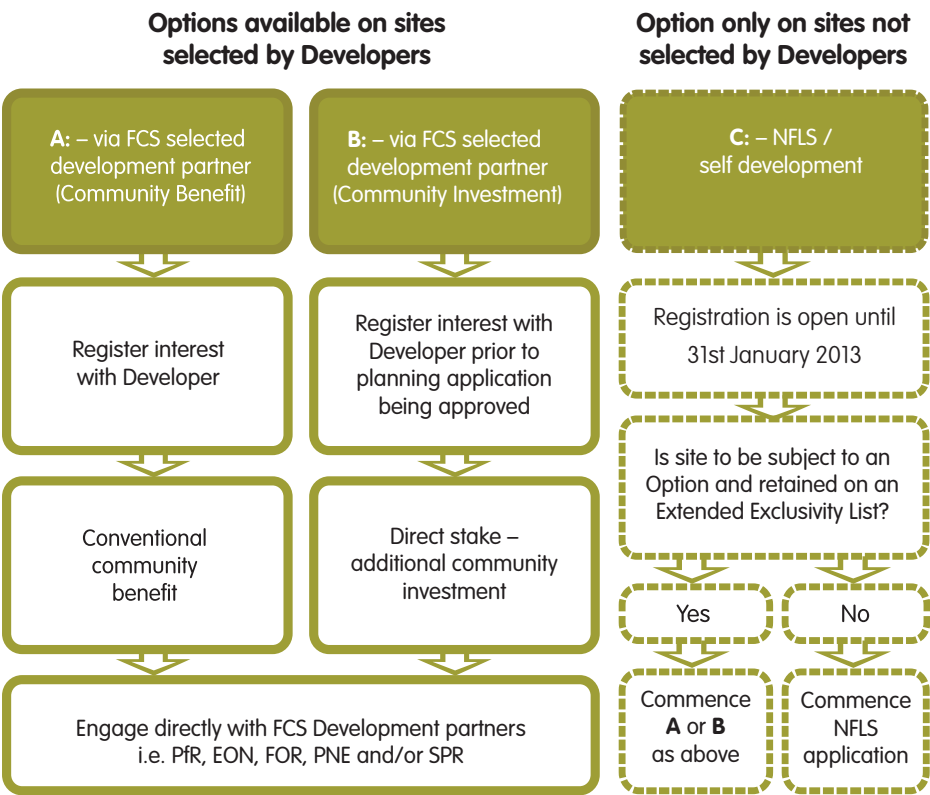
- **Community action** – apply to lease land from Scottish Ministers – rent payable at market rates (There may be an option to buy the land). The rules of the National Forest Land Scheme will apply.
- Can be a significant development cost risk to bear pre-planning consent.
- Need to negotiate terms with contractors or Developer.
- Potentially significant investment required – see page 8.
- Management of all contracts and project management of the development is Community responsibility.
- Opportunity for high reward (100% ownership of development) if successful, but high risk – needs long term commitment.

Options Summary

Example options – based on a typical Wind Project

OPTIONS	A: Community Benefit Payment	B: Community Investment Joint venture with Developer	C: Self Develop - NFLS
Capital requirement	None	Depends on size of stake	Significant - £1.8m to £2.6m for 1.5MW and £28m to £36m for 20MW
Rental payment to FCS for leasing land	Developer pays pre-negotiated rate to FCS	Developer pays pre-negotiated rate to FCS	Community pays market value rate to FCS
Annual payment received by Community	Guaranteed £5000 per MW of installed capacity	Guaranteed £5000 per MW. Potential to generate dividends from the investment in the scheme.	Dividends from the investment in the scheme
Community ownership	None	Up to an agreed maximum share depending on whether FCS also chooses to invest	100% if able to raise all of the capital
Advantages	Guaranteed payments made to Community. No capital outlay.	Terms already negotiated by FCS. Risk is shared with Developer. Stake in project possible. Long term project – long term relationship with Developer.	Full ownership of the scheme. Long term returns could be significant.
Disadvantages	Potentially lower financial return to Community	Dividends may not be paid until several years after initial capital outlay.	Terms have to be negotiated and significant capital outlay invested with no guarantee of success. Wind development often complex. Community responsible for managing the development. Dividends may not be paid until several years after initial capital outlay.
Community input required (time and effort)	Low	Medium	High

Summary of Key Actions



Next Steps

1. Register interest with FCS - contactFoRe@forestry.gsi.gov.uk
2. FCS will confirm which sites have been selected for further investigation in January 2011. For these sites, if you have registered with us, we will pass on your details to the Developer for that site. Developers will then make contact with you.

If a site has not been selected this means that you may be able to proceed with an application under the National Forest Land Scheme for community renewables – www.forestry.gov.uk/nfls

Further information and assistance

If you would like assistance in meeting the requirements as a properly constituted Community Group, the following organisations are able to assist:

Scottish Council for Voluntary Organisations: 0800 169 0022
enquiries@scvo.org.uk

Development Trust Association Scotland: 0131 220 2456
info@dtascot.org.uk

Community Woodland Association: 01309 674 004
jon@communitywoods.org

Community Energy Scotland (CES): 01349 860 129
info@communityenergyscotland.org.uk

CES also specialises in advice on Renewable Energy matters. Free advice and support on Community ownership of renewable energy is available from CES on behalf of the Scottish Government under the [CARES scheme](#). CARES can also provide loans to Communities towards pre-planning costs of renewables projects.



Contact

If you have any queries about this process or the information provided contact Forest Renewables – by email or by phone.

contactFoRe@forestry.gsi.gov.uk

Tel: 01698 22 22 11

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