



# DRIVING THE LOW CARBON ECONOMY

PAPER 2: HYDROPOWER

# KEY ASKS

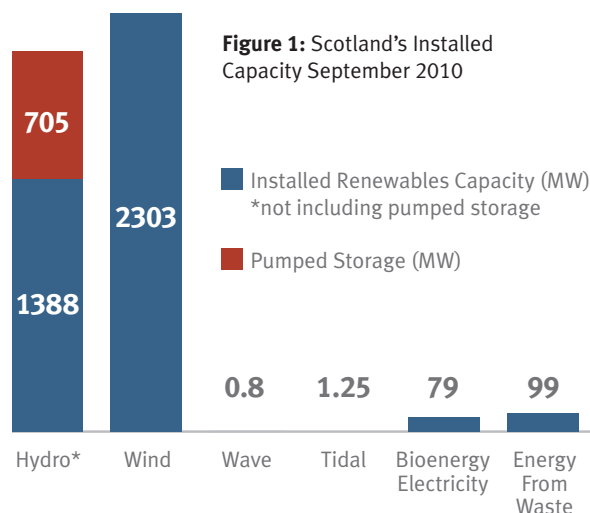
- ✓ BETTER REGULATION
- ✓ IMPROVED GRID ACCESS
- ✓ STABLE FINANCIAL INCENTIVES



## WHERE WE'VE COME FROM...

**HYDRO harnesses the energy from water falling from height under pressure to generate clean renewable electricity.**

Scottish hydropower was established during the last century with the vision of Tom Johnston, Secretary of State for Scotland, developing the North of Scotland Hydro Electric Board in 1943. The Power from the Glens scheme has allowed Scotland to pursue more ambitious renewable energy and climate change targets, with hydropower currently accounting for 10 per cent of the electricity generated in Scotland and nearly half of renewable generation.



## WHERE ARE WE NOW?

Figure 1 shows the crucial role that hydropower plays within Scotland's electricity mix, with just under 1.4GW installed.

Hydropower is an essential part of the energy mix. Its many benefits include the control of supply achievable with storage schemes and their associated high load factors, the carbon saving provided and the longevity of projects. The recent rise in interest in hydropower has also led to a renewed interest in using the existing infrastructure of abandoned or redundant schemes.

The last two years have seen the publication of two reports - *Scottish Hydropower Resource Study*<sup>1</sup> and *The Employment Potential of Scotland's Hydro Resource*<sup>2</sup> - outlining **1.2 GW of hydro potential** left to realise in Scotland. The associated employment opportunity of this potential will be up to **1400 full time equivalents** in 2020; an increase on today's figures, estimated at around 400.

Although hydropower in Scotland is a long established industry, it still faces challenges presented by the cumulative impacts of regulation, the pressures of securing finance in an adverse economic climate and access to the grid. Many of these challenges represent a common theme – the impact of outdated regulation that does not fully take account of the national and European obligations on renewable energy and climate change.

**“Hydropower is mature and well proven which, through constant innovation, has maintained its position as a viable renewable technology. Development in Scotland is key to meeting hydro generation targets so we urge the Scottish Government to refine the regulatory landscape in order to realise the potential.”**

DAVID WILLIAMS, CEO British Hydropower Association

## WHERE ARE WE GOING?

The Scottish Government has a target of 80 per cent of electricity generation to be met from renewable energy sources by 2020, with an interim target of 31 per cent by 2011. Meeting 80 per cent of the electricity demand will require around 12 GW of renewables capacity.

The industry is looking to develop 20-30 MW of new small scale hydro each year, and at least 100-200 MW of additional capacity will be required by 2020 to meet our targets, as outlined in Scottish Renewables' report *Driving the Low Carbon Economy: Renewing our Ambitions*<sup>3</sup>.

In order to do this we need to address the regulatory burden currently placed on the industry. This will require monitoring the range of regulatory constraints

and their consistency with Scotland's renewable energy targets and climate change obligations. The Scottish Government is working with a partnership of European countries to address barriers to meeting Europe's renewables targets within policy and regulation. Although focused on wind energy, the Good Practice Wind project aims to develop ideas to reconcile objectives on renewable energy with wider environmental objectives to improve the policy, guidance, process and practice of dealing with applications for new renewable energy projects. We recommend that the Scottish Government ensures that Scotland's regulations and policies, affecting all renewables including hydro, are consistent with and aligned to meeting our own targets.

## To ensure that we realise the Scottish hydropower potential and meet our renewables targets, we need policy makers to:

### ENSURE PROPORTIONATE REGULATION IN PLANNING AND WATER LICENSING

**THERE is currently duplication between planning and the water licence processes, resulting in 'double jeopardy' for developers. The planning authority as a democratically accountable authority is best placed to consider the social and economic impacts, including recreation, of an application.**

The Scottish Environment Protection Agency (SEPA) as the environment authority is best placed to consider the water environment. This should remove the duplication in the system resulting in reduced risk for developers, a more efficient process (with associated savings to the public purse) and ensure that all considerations are given due importance. By properly defining the roles of SEPA and the planning authority there will be an avoidance of duplication resulting in a more streamlined process and financial savings.

Due to the methods being used by SEPA to classify water bodies, rivers where new hydro schemes are being proposed are automatically treated as though they would be downgraded to 'bad status' if the scheme were consented. This results in unnecessary derogations needing to be reported to Europe. Decades of experience show that hydropower and sustainable river ecology can and do go together and the standards being applied to all new schemes are more than adequate to protect Scotland's rivers to a very high standard. By reviewing

**"There is a huge amount of hydro still to develop in Scotland. To realise this potential we need to ensure that the regulatory and planning regimes work efficiently together to remove costly and unnecessary dual regulation."**

ALASDAIR MACNIVEN, Chairman, Scottish Renewables Hydro Group and RWE npower renewables

the methods used by SEPA to assess the ecological status and potential, the true classification of a river can be calculated resulting in fewer derogations being heard in Europe which would also provide a more accurate picture of the state of Scotland's exceptional natural environment.

SEPA's use of an "efficiency measurement" could stifle the growth of the industry by ruling out schemes based only on a single criterion. Hydropower schemes all reflect the individual aspects of the site in question, from restoring a historic old mill to developing a new upland scheme. Any single measure is bound to miss important aspects, positive and negative, that need to be taken into account.

The current section 36 limit of 1 MW for onshore hydropower is no longer valid and is causing a skewed perception of what is considered a large scheme. Increasing the threshold to 50MW will bring hydro into line with other generating technologies. →

## RECOMMENDATIONS

- ✓ Remove duplication between the water licensing and planning consents process to minimise risk and cost to the public purse through a review of the Controlled Activities Regulations (Scotland) 2005 (CAR).
- ✓ Review SEPA's regulatory methodology (RM34).
- ✓ Ensure appropriate regulation of the hydropower industry by assessing schemes on their merits, not on a single criterion .
- ✓ Scottish Government to support a review of the UK Technical Advisory Group (UKTAG) environmental standards to ensure that these standards are representative of the status of Scotland's rivers and do not work in conflict with the Scottish Government's policy on renewable energy.
- ✓ Increase the section 36 threshold from 1 MW to 50 MW for onshore hydro.

## IMPROVE GRID ACCESS

**THE** upfront and high nature of underwriting a grid connection means that many smaller schemes do not get past the drawing board. In order to ensure the development of the industry a suitable solution to this problem, e.g. through socialised costs or soft loans, needs to be found quickly.

Storage schemes, especially pump storage, already play a critical role in managing the distribution system at a national scale. As the proportion of variable, renewable generation is increasingly used to supply our electricity, the need for responsive and flexible generation increases. While not a renewable technology itself, pump storage hydro can be a powerful grid management tool and enabling technology which will allow the full potential of other renewable technologies to be realised.

## RECOMMENDATIONS

- ✓ Distribution owners to provide the system for connection at their cost and charge Distribution Use of System (DUOS) charges for recovery. The applicant should pay the cost from the turbine house to the nearest High Voltage connection 11 or 33 kV in Scotland.
- ✓ Reform of the TNUoS charging framework to encourage investment in Scotland's hydro resource.
- ✓ Recognition of the important role in relation to renewables of pump storage, in the planning and water licence consenting process.

<sup>1</sup> *Scottish Hydropower Resource Study*, Nick Forrest, 2008

<sup>2</sup> *The Employment Potential of Scotland's Hydro Resource*, Nick Forrest and Jamie Wallace, 2010

<sup>3</sup> *Scottish Renewables (2010), Driving the Low Carbon Economy: Renewing our Ambitions*. [www.scottishrenewables.com/MultimediaGallery/435778a0-b7c6-49f3-a7a8-f83a6e7c1ede.pdf](http://www.scottishrenewables.com/MultimediaGallery/435778a0-b7c6-49f3-a7a8-f83a6e7c1ede.pdf)

<sup>4</sup> *Good Practice Wind Project*, Scottish Government [www.scotland.gov.uk/Topics/Business-Industry/Energy/Action/leading/Good-Practice-Wind](http://www.scotland.gov.uk/Topics/Business-Industry/Energy/Action/leading/Good-Practice-Wind)

## PROVIDE STABILITY IN THE FINANCIAL LANDSCAPE

**AREAS** of the hydropower industry are experiencing difficulty in securing finance for projects including the high costs for due-diligence. This is largely due to three key factors:

- Risk that the Feed-in Tariff is changed resulting in uncertainty and reduced investment potential.
- Risk that the Feed-in Tariff rules on refurbishment are encouraging the use of turbines bought abroad rather than feeding into the UK/Scottish economy by promoting the use of refurbished turbines and UK manufacturing.
- Hydropower has seen an increase in business rates of up to 550 per cent in the 2010 revaluation; no taxation should see such a dramatic increase especially on a single step. This is also without any transitional relief. While the Renewable Energy Rates Relief is welcomed for smaller scale schemes, the dramatic increase for larger schemes is unsustainable and could impact on investment in the industry.

**“Many SRPBA members have hydropower interests and the association strongly supports the ‘key asks’ identified in this manifesto. In order to encourage investment in hydropower it is essential that the government can assure developers and landowners that financial incentives will remain in place into the future.”**

**DOUGLAS MCADAM, CEO, Scottish Rural Property and Business Association**

## RECOMMENDATIONS

- ✓ A commitment to maintaining the Feed-in Tariff to fully optimise the promotion of investment into the sector with guaranteed revenue support, at a level that promotes the optimal use of Scotland's natural resources
- ✓ Review of the accreditation process for the Feed-in Tariff to ensure that it is not a barrier to small scale development
- ✓ Ensure the eligibility of refurbished turbines under the Feed-in Tariff
- ✓ Continuation of a stable financial support mechanism to promote larger projects
- ✓ Proposed Green Investment Bank to promote investment in the industry, at all levels
- ✓ Consider instruments to promote pump storage, such as market support mechanisms, at all levels
- ✓ Early engagement with industry before 2015 Rateable Values are announced, with publication of a transparent methodology for the revaluation process