

# RE-ENERGISING MANUFACTURING

## INDUSTRIAL POLICY FOR RENEWABLES MANUFACTURING IN SCOTLAND

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## SUMMARY

Scotland is uniquely placed, given its abundance of renewable resources, to continue to expand its production of renewable electricity. The nation has seen rapid growth in renewable energy over the last decade, principally from onshore wind. Approximately 4,500 full-time equivalent manufacturing jobs are supported by the low-carbon and renewable sectors in Scotland. In many ways renewable energy is a success story for the Scottish economy and will continue to be so.

The coming decades will see demand for electricity continue to grow while existing renewable energy sites will need to be upgraded and replaced. Scotland could cement its position as a net exporter of clean energy to the rest of the UK, and the Scottish Government's support for a Green New Deal – which would use the full levers of the state to deliver public investment in green jobs – could be a major boon to the country's domestic manufacturing sector.

But far more of the economic value of the supply chains of renewable energy installed in Scotland could be retained in Scotland. The UK's historic approach to both energy policy and industrial strategy more broadly has undermined domestic supply chains. Scottish industry is competing with companies based where energy skills and renewable supply chain development have been taken seriously for years, or are competing against overseas state-backed companies. Unions point to an overall trade deficit in Scotland's low carbon and renewable sector.

The Scottish Government should match its aspirations to be a world leader on climate action with more direct support for domestic manufacturing for its future renewables growth. This means acting both to keep domestic demand high and also to support supply chains from Scottish industry. Business as usual will not suffice; no matter *what* type of manufacturing the government might seek to support, it is going against the headwinds of the UK's economic model over the last 40 years, where laissez-faire economic policy, many decades of a lack of genuine industrial strategy, and the retreat of the state from directly supporting keystone industries, is coming home to roost.



## RECOMMENDATIONS

**Establish a new Scottish Energy Development Agency (SEDA)** to help implement the Green New Deal, ensuring institutional alignment on supporting Scottish green jobs across the public sector, from skills to procurement, subsidy to grant investment – working with the National Investment Bank

**Support domestic demand for renewables** for the long-term. Scotland's domestic renewable energy target should be expanded from the current 100% to 200% of its needs by 2030. This target should be supported by sub-targets for specific sectors such as tidal and marine energy (ie, 1GW installed capacity of tidal energy by 2030) with grant funding provided to support deployment to that level. As Scotland does not control the subsidy (Contracts for Difference) regime it must continue to pressure Westminster to ensure the regime does not discriminate against small-scale renewables or onshore wind, and to attach local content requirements as a condition for the receipt of national subsidy.

**Stimulate local supply of domestic content.** Conditions should be set for local content in all areas that the Scottish Government controls – for example, the operation of the Crown Estate, which licenses the sea bed for offshore wind, is devolved to Scotland. Ministers should establish a centre of excellence skills programme for manufacturing, and extend and strengthen the remit of the planned Publicly Owned Energy Company to enable it to directly support energy supply, generation, and distribution, as well as supporting local cooperatives and smaller companies.

**Localise industrial strategy.** More powers should be given to regions and localities to set out financed plans for local industrial transformation, via processes that are more democratic than those led by Local Economic Partnerships.

**Provide supportive finance.** The Scottish National Investment Bank must be given a coherent 'Green New Deal' mission that aligns it to the work of the SEDA. Its mandate must specifically ensure it can support the development of Scottish supply chains in low-carbon industry and that its lending is consistent with delivering a 'just transition'. Representatives of manufacturing, including trade unions, should form part of the Bank's board.

**Embed a Just Transition for workers into industrial strategy.** A Just Transition Fund should be created which would provide the time and resources workers need to proactively engage with the realities of the low carbon transition, and the principles of the Just Transition should be central to the remit of all agencies including a SEDA. Finally, the existing Just Transition Commission should be placed on a statutory footing within the Climate Change Bill.

# 1. INTRODUCTION

In many ways, renewable energy in Scotland is a major success story. Over the last decade the country has seen huge growth in the sector, particularly from onshore wind. Scotland is broadly on target to meet 100% of its own electricity needs provided by renewables by the year 2020. With future electricity demand expected to grow, Scotland is uniquely placed, given its abundance of renewable resources, to continue to expand its production of renewable electricity, firmly establishing itself as an exporter of clean energy to the rest of the UK and beyond. From wind power – onshore and offshore – to tidal and solar, it should be a no brainer for Scottish industrial strategy to focus on how to secure the maximum possible domestic benefit from this significant economic opportunity.

The sector generates significant benefit for the Scottish economy, creating and supporting jobs in a diversity of sectors.<sup>1</sup> One study into eight Scottish onshore wind farms suggests that 51% of the economic value of their total expenditure flowed to Scottish content<sup>2</sup> – 66% to the UK as a whole. These are impressive figures, but they nonetheless suggest untapped opportunities for still greater domestic job creation.

It is an eye-catching and often noted fact that there are no manufacturers of wind turbines themselves in Scotland. At a more granular level, trade unions have pointed to recent examples of high profile contracts for manufacturing components for Scottish wind energy being awarded to companies overseas. The principal reason for this is a historic approach to both industrial strategy and energy subsidies in the UK that pitches domestic industry against overseas competitors who have a stronger legacy of directly supporting the development of world class renewables supply chains.

This report looks specifically at the manufacturing sector and what policy lessons can be learned from the last decade or more: is there more that could be done to bring greater numbers of the jobs in the Scottish renewables manufacturing supply chain to Scotland? And what are the implications of this for Scottish energy and industrial policy more broadly?

We focus on manufacturing precisely because the sector carries significance beyond the raw numbers of jobs. By the nature of the sector, manufacturing jobs tend to be clustered, and sites can be significant local employers. They tend to be rooted in communities as foundational local employers, whose unmitigated closure can devastate local areas. Manufacturing also attracts particular attention in the national debate – rightly, as it is a keystone industry, carrying a greater importance than just the number of jobs it supports.

As Scotland responds to the climate emergency and puts together its plans for delivering on a Green New Deal, then everything that can be done to bring jobs and economic value to Scotland should be.

## 2. SCOTTISH RENEWABLE ENERGY

### 2.1 GROWTH IN RENEWABLES

Over the last decade Scotland has seen rapid growth in renewable energy, principally from wind power – appropriately, for what some claim is the windiest country in Europe.

The policy regime supporting renewables growth responds to headline targets from Holyrood and Westminster:

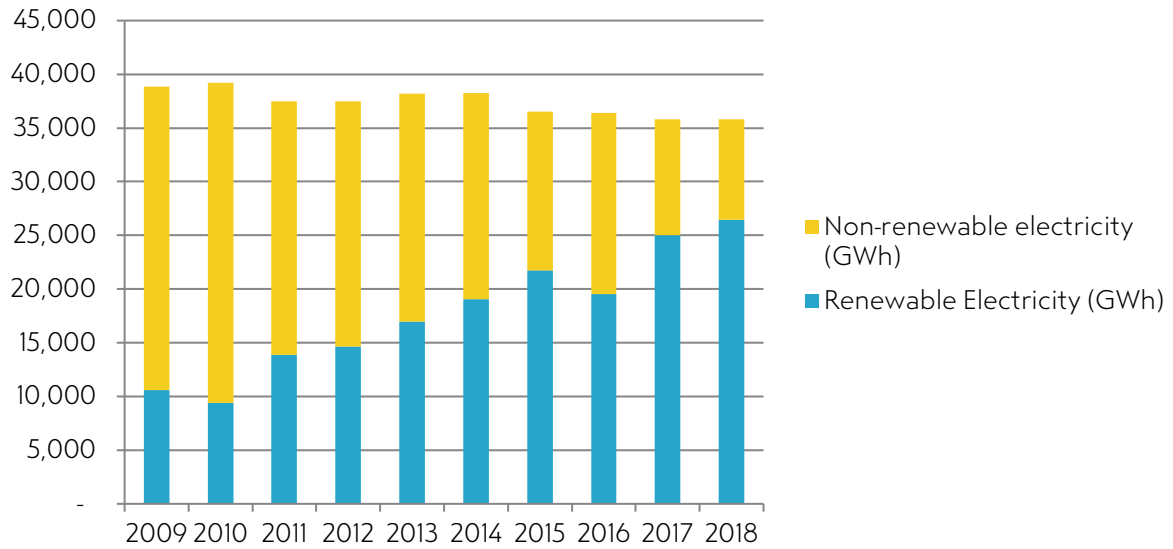
- The Climate Change Act (Scotland) 2009 has already set a target for Scotland to reduce emissions of all greenhouse gases by at least 80% by 2050. This will be replaced with a target of net zero emissions by 2045 by the Climate Change (Emissions Reduction Targets) (Scotland) in line with the recommendations of the Committee on Climate Change.<sup>3 4</sup> For the UK as a whole, the Climate Change Act 2008 originally set a target of 80% carbon reduction by 2050, recently increased to net zero emissions by the same date.
- The Scottish Government has set a target for 50% of the country's electricity to come from renewables by the year 2015, and 100% by 2020.

Scotland is largely on course to meet the equivalent of its own domestic electricity needs from renewable energy by 2020. In 2005 only 15.5% of Scotland's electricity capacity was from renewables; in 2018 it was 74.6% (see Figure 1). Meeting the 100% target requires approximately 15 GW of installed renewable capacity to be required; as of December 2018 Scotland had 10.9 GW<sup>5</sup>.

Most of that is down to wind power, predominately onshore (see Figure 2). In addition to subsidies from Westminster (see Section 3), Scotland has a more permissive approach to licensing onshore wind than the rest of the UK. Scotland now accounts for nearly half of the UK's total turnover from onshore wind.<sup>6</sup>

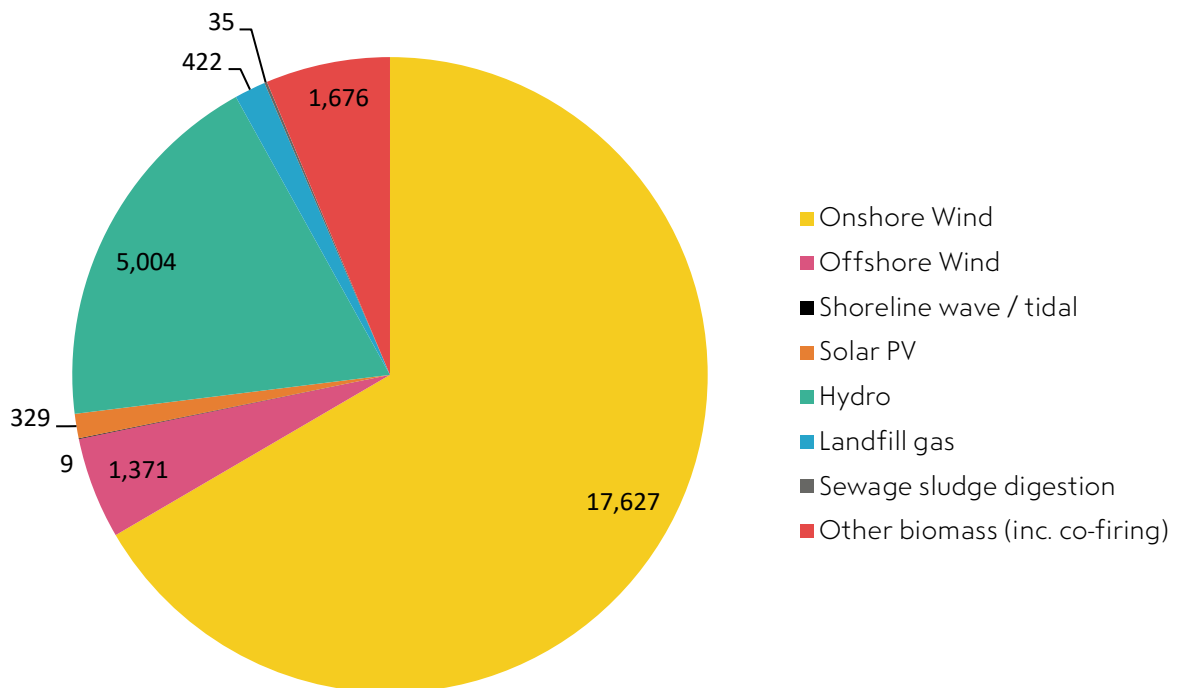
The UK government expects net electricity demand to stay approximately stable until 2035<sup>7</sup> as increased electrification across the economy in the short term is balanced by greater efficiency. However beyond that, increased electrification of heat and transport is expected to raise overall electricity demand significantly. The Royal Society of Edinburgh predicts that Scotland meeting its 2045 net zero goal could require a fourfold increase in electricity generation.<sup>8</sup> In any event, continuing to expand renewable capacity could cement Scotland's historic position as a net exporter of energy to the rest of the UK. Existing onshore wind farms will need to be upgraded, maintained and replaced<sup>9</sup> – as part of a process of 'repowering'<sup>10</sup> existing sites – and other technologies will be

**Figure 1: Gross electricity consumption in Scotland, % of renewables output, 2009-18**



Source: Scottish Government Energy Statistics Database, June 2019<sup>11</sup>

**Figure 2: Renewable energy generation in Scotland by technology, as of Q4 2018 (GWh)**



Source: Department for Business, Energy & Industrial Strategy Energy Trends: UK Renewables<sup>12</sup>



increasingly likely to underpin further expansion of renewable energy in Scotland. For example:

- **Conventional offshore wind:** As of 2018 a further 4.8 GW of offshore wind projects have planning permission ahead of competing for UK wide subsidy auctions (see Section 3), compared to 0.6 GW of current offshore wind capacity.
- **Deepwater floating offshore wind turbines:** There are large sites off the coast of Scotland, particularly the North East, which could be used to establish a significant deep sea wind farm. Norwegian company Statoil has already used the Hywind Scotland Pilot Park to develop its early technologies.<sup>13</sup> Scotland has a significant amount of expertise and geographical advantage to establish itself as a world leading manufacturer.
- **Tidal and wave:** Orkney already has major energy and research facilities, but there remains a need for large-scale demonstration. The sector has for some years been hailed as a potential keystone industry for Scotland, but is still hampered by high cost at present – even though the recent history of renewable energy deployment tells us that costs will fall over time.

## 2.2 JOB CREATION IN RENEWABLES

The potential for job creation in the low carbon and renewable (LCRE) sector has been one of the focuses of successive Scottish industrial strategies. Office for National Statistics (ONS) data suggest that there has been job growth over the last decade in the LCRE sector in Scotland and that the sector is now disproportionately important compared to the rest of the UK: 2.4% of Scottish non-financial turnover and employment was from the LCRE sector in 2017, compared to just 1% for the UK as a whole.

Scottish renewable energy generates significant economic benefits to the country. The ONS estimates that in 2017 Scotland was home to 6,000 businesses connected to the ‘low carbon electricity’ sector, generating a turnover of £3.4 billion – over a quarter of the UK total.<sup>14</sup> Research commissioned by the Scottish Green Party has shown that the renewables sector could directly employ over 200,000 workers by 2035.<sup>15</sup>

The ONS further estimates (see Tables 1 and 2) that as of 2017:

- The LCRE sector in total supported 21,400 full-time equivalent (FTE) direct jobs in Scotland – approximately 10% of the UK wide figure – with an estimated 25,000 additional indirect jobs.
- 8,300 direct FTE jobs were supported by the ‘low carbon electricity’ sector in 2017, which includes nuclear – of which 2,300 were in onshore wind and 1,900 in offshore.

Table 1: Breakdown of full-time equivalent LCRE jobs in Scotland, 2017

<i>Direct employment in the LCRE sector</i>	2014	2015	2016	2017
Scotland	21,600	22,100	23,900	21,400
UK	237,000	202,200	208,300	209,500

Source: Office for National Statistics (2019).<sup>16</sup>

Table 2: Breakdown of full-time equivalent LCRE jobs in Scotland, 2017

<i>Sector</i>	<i>Direct</i>	<i>Direct and indirect</i>
Energy efficiency products, systems and lighting	10,100	17,800
Nuclear	2,800	9,900
Onshore wind	2,300	5,800
Offshore wind	1,900	3,400
Hydropower	1,100	3,600
Renewable heat and CHP	1,200	2,400
Low carbon financial and advisory services	700	900
Bioenergy	700	1,500
Alternative fuels	300	700
Solar photovoltaic	100	300
Other renewable electricity	0	0
CCS	0	0
Low emission vehicles and infrastructure	<100	100
Fuel cells and energy storage	<100	<100

Source: Office for National Statistics (2019).<sup>17</sup>

## 2.3 MANUFACTURING AND RENEWABLES

An estimated 190,000 people are employed in manufacturing in Scotland and it produces half of the nation's exports,<sup>18</sup> but as with the rest of the UK the sector is in historic decline. In 1973, 29% of Scotland's economic activity was accounted for by manufacturing;<sup>19</sup> as of 2018 this had fallen to 11%.<sup>20</sup> For the UK as a whole (Table 3), for 2017 the ONS estimates that 60,100 people were directly employed in low-carbon manufacturing – approximately 21% of total LCRE jobs. It has separately estimated that this translates to approximately 4,500 FTE jobs in the Scottish LCRE economy within the manufacturing sector.<sup>21</sup>

Yet analysis by the Scottish TUC (STUC) suggests that while many Scottish companies have been and remain part of the supply chains for the manufacture of wind energy the country's LCRE sector nonetheless shows a significant overall trade deficit (£229 million between 2014 and 2017).<sup>22</sup> It is noticeable that onshore wind, the engine of renewables growth over the last 15 years, is the main contributor to this balance of trade deficit (see Figure 3).

Table 3: LCRE employment in manufacturing, by sector, UK wide, 2014-2017

	2014	2015	2016	2017
All sectors	66,900	68,100	66,500	60,100
Offshore wind	1,000	800	1,400	1,600
Onshore wind	900	1,400	1,700	900
Solar photovoltaic	600	<100	<100	300
Hydropower	200	<100	<100	<100
Other renewable electricity	300	<100	<100	100
CCS	<100	0	0	0
Nuclear	500	1,000	500	[no data]
Renewable heat and CHP	100	200	300	800
Bioenergy	600	<100	200	400
Alternative fuels	<100	900	<100	<100
Energy efficient lighting, systems and products	54,600	50,800	53,600	47,700
Low carbon financial and advisory services	0	0	<100	0
Low emission vehicles and infrastructure	7,600	12,300	7,100	6,900
Fuel cells and energy storage	400	500	1,400	700

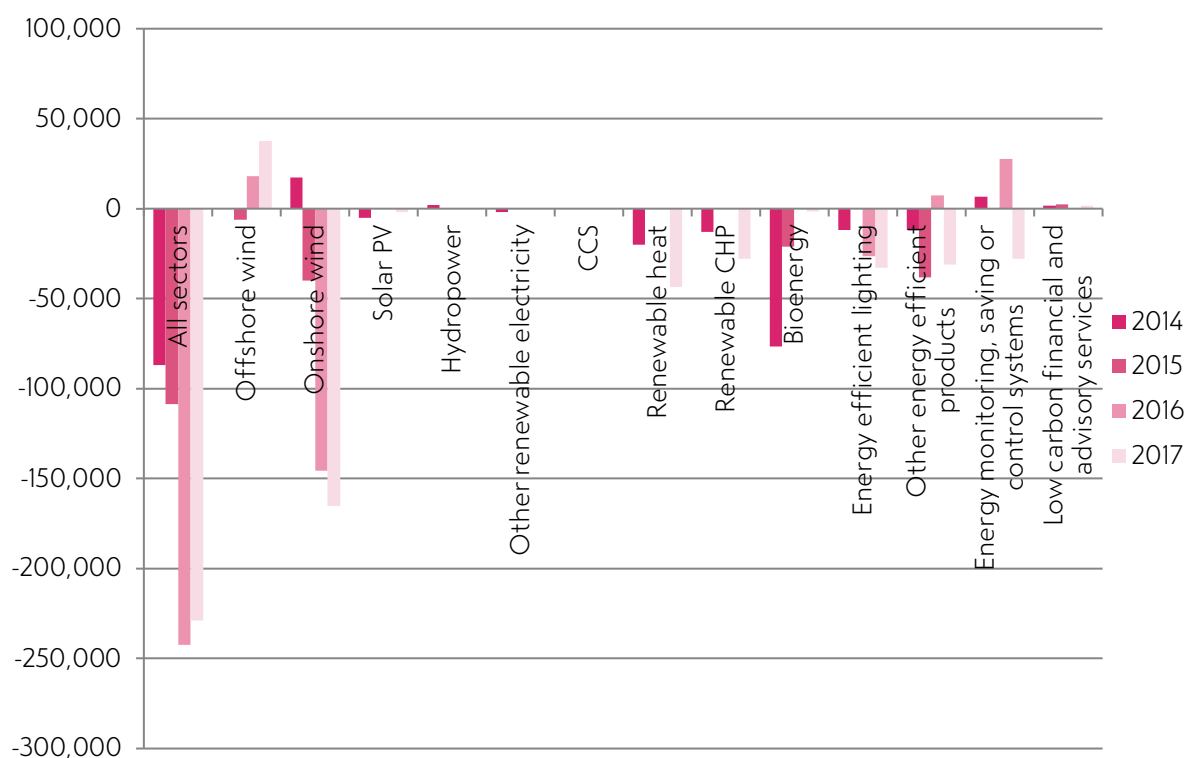
Source: Office for National Statistics (2019)<sup>23</sup>.

The STUC claims that this is explained by the jobs that renewable energy does support in Scotland being more likely to be produced in the physical construction stage rather than via domestically produced inputs in supply chains or for the export market.<sup>24</sup> This may go some way to explaining the drop-off in jobs in the Scottish LCRE sector from 2016-17, principally as a result of a reduction in onshore wind jobs (from 3,600 to 2,300)<sup>25</sup> coinciding with reduced construction of onshore wind in Scotland as a result of changes to the renewable energy subsidy regime in Westminster<sup>26</sup> (see Section 4).

The STUC argue:

*“A number of current renewable energy development projects illustrate the failure to build a domestic industrial base and an over-reliance on imported goods and services... overseas state-protected, loss making industries [are] gaining an uncompetitive advantage within Scotland’s LCRE economy, while simultaneously driving down working conditions.”*

**Figure 3: Scottish low Carbon and renewable energy sector balance of trade, 2014-17 (£ thousands)**



Source: STUC analysis based on ONS data<sup>27</sup>

The UK government's Offshore Wind Sector Deal (March 2019) has set a target of 60% lifetime UK content in domestic offshore wind projects by 2030 – up from less than 50% historically.<sup>28</sup> There are a number of well publicised examples of where opportunities may be being missed. The STUC cites the Moray East Windfarm, where 100 turbines are being built by a multinational consortium including the French company Engie (23.6% owned by the French state);<sup>29</sup> and a contract for a trial floating windfarm south-east of Aberdeen awarded to a consortium including the 100% Spanish state-owned shipbuilding company, Navantia. The travails of the BiFab plant in Fife have made national headlines (see Box 1). Unions have also pointed out that where jobs have been created, these have often been poor quality and non-unionised. The offshore wind sector has a lack of trade union recognition and challenging working conditions.<sup>30</sup> The Beatrice Offshore Windfarm, for example, was exposed for paying migrant workers below the minimum wage.<sup>31</sup>

**Box 1: BiFab**

BiFab is an engineering firm with yards in Methil, Burntisland and Arnish. Two of BiFab's steel fabrication yards (Burntisland and Methil) are mothballed. Contracts it was hopeful of securing to manufacture steel jackets for Scottish offshore wind generation have been awarded overseas. Trade unions claim that this includes companies that take a more generous interpretation of the constraints of state aid rules than those in Scotland.<sup>32</sup> The most recent development has been the launch of a joint trade union and NGO campaign to persuade EDF Energy to honour commitments to use the BiFab yards for offshore wind manufacture for the huge new Neart NaGoithe (NnG) wind farm, rather than shipping components from Indonesia. The Scottish Government, which took an equity stake in the company in 2018, has acknowledged that it could have done far more in the consenting process for NnG to demand, not just expect, far greater local jobs content.<sup>33</sup>

Whether for offshore wind, onshore, or other renewable energies, the above shows us that Scottish industry is competing in supply chains with companies based where energy skills and supply chain development have been taken seriously for decades. Countries such as Denmark – which, along with Germany, primarily manufactures Scotland's wind turbines<sup>34</sup> – were in the 1980s actively seeking to build green jobs in the nascent wind industry including through reducing business rates, as the UK actively fell behind. In addition, privately run, globally exposed Scottish companies are losing out in the contracting process to wholly or partially publicly owned companies from other countries.

Boosting Scottish renewables manufacturing is principally a much broader challenge of industrial policy. No matter *what* type of manufacturing the government might seek to support, it is going against the headwinds of the UK's economic model over the last 40 years, where laissez-faire economic policy, many decades of a lack of genuine industrial strategy, and the retreat of the state from directly supporting keystone industries, is coming home to roost. It will need to do more to support both the growth and capacity of local suppliers, while also ensuring that the state is using its full ability to directly support or require local content in supply chains and secure long term demand.

Scotland has genuine ambitions to be a world leader on climate action. Its establishment of the Just Transition Commission is a starting template for the rest of the UK to follow, although it should be put on a statutory footing for the long-term to ensure the consistency and profile of the just transition for the years to come. The Scottish Government and the UK Parliament both agree that there is a climate emergency.<sup>35</sup> Scotland also has a manufacturing sector that is seeing the opportunities for domestic clean energy leave the country. Joining these up should be a central focus for Scottish industrial strategy: a 'mission' to secure a new generation of good work in clean

infrastructure. This unites it with the Scottish Government's support for a Green New Deal (see Box 2). The clean energy, heat networks, infrastructure, efficiency measures and transport that are needed to deliver on the ambitions of the Scottish Climate Change Act will require very many things to be manufactured. The question is *where*.

**Box 2: Green New Deal**

Momentum is building around the world for a 'Green New Deal' – a framework first devised by 2007/8 by the New Economics Foundation and others.<sup>36</sup> It would push responding urgently and fairly to the climate and ecological crisis as a central organising principle for government, using the full levers of the state to deliver public and private investment on a scale that would unlock new industries and a new generation of green jobs. Central to the Green New Deal is an explicit focus on the quality and the quantity of jobs as part of turning the just transition into reality – such as ensuring a wealth of manufacturing jobs in the infrastructure that will be essential to deliver rapid carbon cuts.

## 3. POLICIES FOR BOLSTERING RENEWABLES MANUFACTURING IN SCOTLAND

This section explores different areas in which the Scottish Government could bolster domestic supply chains for renewable energy manufacturing.

A central recommendation for all that follows is the need for institutional alignment and the coherent translation of a Green New Deal mission into joined-up decision making. We recommend that the Scottish Government **establishes a new arms-length Scottish National Energy Development Agency (SEDA)**, as recommended by Common Weal<sup>37</sup> to coordinate the above.

The SEDA would:

- Translate the implication of the Green New Deal mission – for decent, unionised, well paid work in green industries which maximise the benefit to local communities – into a set of criteria to guide decision making on supporting local supply chains. It should unite environmental objectives with the existing ‘Fair Work’ action plan (2019).<sup>38</sup>
- Ensure institutional alignment across the public sector – from skills to procurement policy, subsidy to grant investment, and should work closely with the Scottish National Investment Bank in the coordination and deployment of a Green New Deal.
- Act as an intermediary organisation between the government and the wider economy to ensure that all is being done to support Scottish renewables manufacturing in the short term (through targeted support) and in the longer-term (through skills and research and development (R&D) investment). Relevant functions of existing public bodies such as Scottish Enterprise and the Highlands and Islands Enterprise (HIE) should be incorporated into its structure.

### 3.1 DIFFERENT TYPES OF INTERVENTION

Driving more of the value of Scottish renewables to Scottish business means we need to look at both supply and demand aspects:

- **Demand:** Ensuring a high level of domestic demand for renewables is a prerequisite, but this must be matched with incentives and requirements for the companies that are awarded subsidies or consents to prioritise local jobs and content. The Scottish Government must adopt an envelope-pushing approach to insisting that contracts, subsidies, or consents for renewable energy are



accompanied with far higher local content requirements, as has been the case in other countries such as India, the US, and Canada.<sup>39</sup> As explored below, the Crown Estate – which is devolved to Scotland – should attach requirements to its leases.

- **Supply:** More support is needed for Scottish firms to establish, innovate and compete within what are globally exposed markets. The Scottish Government will need to take a more hands-on role, including the establishment of new public bodies to guide the strategic skills, investment and R&D support that Scotland's manufacturers need to thrive.

In addition, policies and processes will be needed to ensure that decisions on the future of manufacturing – at the plant and sectoral level – are taken in the interests of workers, communities and the new mission of responding to the climate emergency. The principles of the just transition must start to guide industrial policy, starting now.

### **3.2 DEMAND: DELIVERING LONG-TERM CERTAINTY**

One of the primary functions of industrial policy is to provide a clear market-shaping and market-creating role – where the state leads the growth process rather than just incentivising or stabilising it. This would reduce as much as possible the perceived and actual risk of industry that may need to invest in new plants, skills or processes in order to secure contracts. The Scottish Government should use every policy lever available to it to underline a long-term commitment to renewable energy in Scotland: both its enduring centrality to the Scottish energy mix, and that it will leave no stone unturned in supporting Scottish manufacturing to be integral to the renewable energy supply chain.

It has long been recognised (for example, see UK government 2008<sup>40</sup>) that the level of domestic demand for renewable energy is an important underpinning of domestic supply chain capacity. This is seen to be necessary, albeit insufficient, to give confidence to manufacturers to invest in the programmes of investment in capital and skills that will be required.<sup>41</sup> A 2014 review for the UK government by the Offshore Wind Industry Council cited long-term policy commitments to decarbonisation as its top recommendation for supporting the offshore wind supply chain.<sup>42</sup>

The main policy lever that determines domestic demand in Scotland is out of the Scottish Government's direct control: the subsidy regime for renewable energy governed by Westminster. The two main subsidies that have driven the expansion of onshore wind in Scotland (the Renewables Obligation and Feed-in Tariff) have both closed; the early closure of the former to onshore wind in 2017 was blamed at the time for the loss of 2,400 jobs in Scotland.<sup>43</sup> It leaves only the Contracts for Difference (CfD) scheme operational as a subsidy for renewable energy, under which renewable generators are guaranteed a fixed price for their power.<sup>44</sup>



Unlike the Feed-in Tariff, whereby different levels of support were available to different renewable technologies, the CfDs are ostensibly 'technology neutral', awarded on the basis of competitive auctions – in the name of keeping down the overall costs to consumers, incentivising only the most 'efficient' renewables, and encouraging the driving down of costs within the sector. This mitigates against pioneer industries such as tidal energy whose unit cost is still far higher than that of more mature technologies such as onshore wind, whose costs have fallen over the last decade precisely as a result of targeted subsidy.

Moreover as the rules currently stand, onshore wind, apart from on 'remote islands', is not eligible for CfDs.<sup>45</sup> The CfD regime is not fit for purpose to help meet Scotland's energy goals. Changes should be made by Westminster to the CfD regime to support the energy mix that Scotland needs, and Scottish ministers should continue to push for them.

But rather than simply hoping for UK-wide subsidy reform to arrive, Scotland should directly incentivise the development of its own energy mix. A key route would be the establishment of grant funding, combined with low-interest loans from the Scottish National Investment Bank, for pioneer renewable projects. The level of finance provided should match headline aspirations for growth in particular sectors, particularly those where Scotland risks losing what has historically been seen as a cutting edge.

**One specific example could be to enable a headline target of delivering 1GW of Scottish tidal energy by 2030 with a £1.3 billion revenue support pot.** This is the amount that the Offshore Renewable Energy Catapult estimates will be required in revenue support to incentivise deployment of 100MW of installed tidal stream capacity per year until 2030.<sup>46</sup>

This direct support should go further than current programmes, such as the Scottish government's existing £10 million Saltire Tidal Energy Challenge Fund<sup>47</sup> - actually a prize, which has had to be relaunched as success originally required a level of generation to the grid that no competitors were able to match. The government and National Investment Bank could also play a greater role in match funding or underwriting projects such as Scottish Power's investment in a 'super battery' for its Whitelee wind farm.<sup>48</sup>

The rewards of such public investment should be socialised rather than privatised, for example through price-capping schemes on public energy, or retaining the royalties on equities through state-owned venture capital funds – not least because the state would in this instance be bearing the risk of investment.<sup>49</sup> And most importantly for domestic content is to ensure strict requirements for locally produced content as a condition of any such funding or underwriting of support.

The Scottish Government should:

- **Expand its own domestic renewable electricity target to 200% of its needs by 2030**, ensuring it is ready for future increases in demand and can be a net exporter to the rest of the UK. It should also include sub-targets for specific sectors – for example, that **20% of Scotland’s electricity requirements by 2030 will be met by tidal and marine energy**.
- **Establish direct grants for the deployment of pioneer industries such as tidal stream energy**, in the absence of an effective CfD regime. Specific requirements for local content should be central to any such programme.
- The above notwithstanding, ministers should **pressure Westminster to ensure that there are still adequate subsidies in place for small scale, developing technologies such as tidal and marine energy**, and should **remove its opposition to classifying onshore wind as eligible for receiving a Contract for Difference**. It should also ask Westminster to attach firm conditions to the awarding of any national subsidy that at least 60% of all content is supplied domestically.
- **Use procurement smartly. Power Purchase Agreements (PPAs) should be used within the public sector**, particularly large ‘foundational’ sites such as hospitals, committing to purchase energy from renewable schemes meeting particular criteria.<sup>50</sup> Scottish Renewables have proposed an innovative new form of PPA specifically to support frontier technologies such as tidal and wind.<sup>51</sup> The success of the Preston Model (see Box 3) has demonstrated how effective public procurement can be in building community wealth<sup>52</sup> and Scotland has precedent here, including the Glasgow Commonwealth Games having Community Benefit Clauses built into large contracts in the building of stadia.<sup>53</sup>

### Box 3: The ‘Preston Model’

In 2011<sup>54</sup> Preston City Council, working with the Centre for Local Economic Strategies and the University of Central Lancashire, pioneered a new model to localise economic development based around shifting the procurement policies of ‘anchor institutions’ – including the university and hospital – towards locally based suppliers. This has had a major impact, with the proportion of spending by anchor institutions in the city increasing from 5% (Preston) and 39% (Lancashire as whole) to 19% and 81% respectively.<sup>55</sup>

## 3.3 SUPPLY: SUPPORTING LOCAL CONTENT

The CfD process has been criticised by the STUC<sup>56</sup> for forcing the squeezing of costs to produce the most competitive bid. It creates downward pressure within domestic supply

chains on wages, terms, and conditions, and may put Scottish companies at a disadvantage against overseas competitors whose development at scale may have been supported by their governments for years, including companies that are state owned.

CfD projects of over 300MW are required to complete 'supply chain plans'<sup>57</sup> to set out how they will ensure that their projects can be delivered and to encourage further innovation and competition on cost through the supply chain. The official guidance of these plans do not specifically require local content.<sup>58</sup> The supply chain plan for the Neart na Gaoithe wind farm (see BiFab case study, Section 3) includes an endorsement from the Head of Enterprise, Planning and Protective Services at Fife Council for the quality of "local companies who can provide high-quality local content ... [including] heavy fabrication companies such as BiFab".<sup>59</sup> However in reality there is a world of difference between the theoretical existence of a local supply chain and binding commitments or requirements as part of the CfD process to actually support and give certainty to that supply chain.

It is important to note that the CfD auctioning process is UK wide and that, all things being equal, local content requirements for Scotland could increase the headline cost of a Scottish project, potentially – depending on the scale of the cost differential – putting it at a disadvantage in a competitive bid. This only underlines the problems of the main subsidy regime for renewable energy being driven by factors of headline cost rather than broader economic benefit. It points to the need for the Scottish Government to: push Westminster for stronger local content requirements for the scheme as a whole to ensure a level playing field; investigate alternative or complementary subsidy regimes of its own (see above); and use other levers to support the competitiveness of Scottish manufacturing.

To stimulate local supply, the Scottish Government should:

- **Set conditions for local content where it can – particularly via the leasing process.** The operation of the Crown Estate is devolved to Scotland,<sup>60</sup> which gives the Scottish authorities considerable influence over conditions that could be attached to the granting of offshore wind leases. In the wake of the BiFab saga, Scottish ministers have hinted that they are open to doing what was not done in that case and actively requiring companies receiving offshore wind leasing to invest in local content, rather than hoping that this will happen or taking assurances at face value.<sup>61</sup> As part of this, it should consider **including the embedded carbon emissions included within international travel** as part of the overall assessment of proposed consents.
- **Establish a centre of excellence technical skills programme for manufacturing** to train young people and those in need of reskilling as a result of industrial transition. A grant funding pot should be provided for manufacturing firms that wish to retrain or upskill their workforce in line with

the potential opportunities in renewables supply chains, as this may require people stepping away from production during this process. It should follow from an overall skills strategy coordinated by SEDA which will identify the skills that are needed within renewables manufacturing as part of an overall Green New Deal Strategy, what institutions should be involved and how they will work together, what the timelines are, and what funding is needed. It should follow a 'quadruple helix' approach (see below) to ensure this reflects the reality of local needs and assets. An example from which inspiration can be drawn is from the Mondragon Corporation in the Basque region in Spain, which identified a skills shortage in the locality and established a university "close to the needs of businesses" in 1997.<sup>62</sup>

- **Extend and strengthen the remit of the Scottish Publicly Owned Energy Company.** We welcome the Scottish Government's plans to create a Publicly Owned Energy Company (expected 2021) which has a number of ambitious aims.<sup>63</sup> The Company should look to support local energy cooperatives and smaller public energy companies and provide a level playing field for energy pricing and investment. In addition, the Company should be directed by the SEDA and should be established as both an energy supplier as well as a developer and manager of energy generation, distribution and fuel supply assets. An important early job will be to manage and deliver needed projects in instances of market failure, for example when no other company offers itself as a suitable delivery vehicle.

### **3.4 LOCAL COMMUNITY BENEFIT**

The intelligence and needs of the communities and workers who are most affected by the fortunes of the manufacturing sector should drive the policies of the SEDA. The identity and economic outlook of entire communities can be intimately bound up with the fortunes of manufacturing, as is all too evident at the time of writing to the workers of British Steel and the wider residents dependent on its Scunthorpe plant. There are no one-size-fits-all approaches that will perfectly capture the diversity of Scotland's renewable manufacturing challenges and potential, nor the skills and assets of different communities.

A Green New Deal should be the mission for local economic planning, as well as national. The £1.13 billion Glasgow City Region Deal was dedicated to a range of infrastructure projects, but none of which are oriented towards world class sustainable manufacturing – despite one interviewee for this report describing Glasgow as the "onshore and offshore wind capital of the UK" due to the close presence of institutions such as the Offshore Renewable Energy Catapult (ORE Catapult) and Strathclyde University.

Industrial strategy must be localised, with more powers given to regions and localities to set out their own industrial plans, and which can connect directly to funding, including from the Scottish National Investment Bank. The process of drawing up these strategies should be more democratic than those led by Local Economic Partnerships (LEPs)<sup>64</sup> by involving unions, firms, community groups, reformed job centres and local education institutions along with local and central government representatives, to develop coherent plans for industrial transformation. These local strategies should:

- **Include skills and business support plans that focus on foundational sectors** such as health care, as well as the manufacturing sector, developed through the genuine and active participation not only of education institutions and of employers, but of unions, workforces, community based businesses and young people.
- **Seek to channel investment through business models that generate a return that is anchored in the local community:** for example through local ownership, developing locally anchored lending institutions, and incentivising the re-investment of profits into the local economy, with an explicit move away from types of inward investment which extract wealth from the local economy.
- **Engage explicitly with city deals,** ensuring that investment in infrastructure and sector development is aligned with overall industrial strategy goals, and that gross value added (GVA) growth targets are connected clearly to targets in living standards, job quality and environmental resilience.

### The Scottish Government should

- **Establish a Scotland-wide programme of ‘people and place centred industrial strategies’** which commits to an overhaul of the powers, mandate and finance needed to enable regions and localities to set out their own industrial plans.
- **Give the SEDA an explicit mandate to maximise the community economic benefit from its support for renewables supply chains.** To do this it should follow a ‘quadruple-helix’ model of regional economic development – an evolution of the Dutch ‘triple-helix’ model which has been used to reverse industrial decline in Eindhoven and established it as a major technology node within the Netherlands.<sup>65</sup> The quadruple helix approach aims to build local capacity and consensus around projects, ensuring that the maximum local benefit is derived. It aims to strengthen collaboration between four key actors: the national and regional government businesses, knowledge institutions, and local communities.<sup>66</sup>

### 3.5 SUPPORTIVE FINANCE

The Scottish National Investment Bank (SNIB) must play an essential role in supporting the investment in plants, skills and processes that will be needed for Scottish manufacturers to play a greater role in supply chains. Germany's recent success in energy decarbonisation has been underwritten by €15 billion in co-financing of renewable energy projects from the KfW Development Bank in 2015 and 2016 alone<sup>67</sup> – a bank that has consistently pushed at the boundaries of what is possible within state aid rules.<sup>68</sup>

**As the establishment of the SNIB passes through the legislative process it is essential that its mission, mandate and governance are defined with appropriate ambition for delivering a Green New Deal for Scotland.**

- (1) **Mission:** It is welcome that the Programme for Government (September 2019) commits that the SNIB will have the “transition to net zero” as its primary function.<sup>69</sup> It must now ensure institutional strategic alignment between the SNIB and the rest of the Scottish economy. This can be guaranteed through a number of ways, including establishing a Scottish National Energy Development Agency (see above) which would work alongside the Bank and help provide strategic support. It is essential that the SNIB is able to leverage its capital base so that it can borrow and invest on the scale needed, as is common with other European public investment banks, to enable it to become a fully-powered engine of Scotland's green ambitions.
- (2) **Mandate:** the SNIB's Articles of Association must ensure that it has a specific mandate to support the development of Scottish supply chains in low-carbon industry as part of delivery on its broader mission, and must ensure that lending is consistent with the principles of a just transition – targeting in particular investments that directly bolster employment in sectors and geographies whose workers are most at risk from industrial change.<sup>70</sup> The Bank must be used to provide ‘long-term patient strategic finance’, which invests in early technologies and the long processes of industrial transition.<sup>71</sup>
- (3) **Governance:** representatives of Scottish manufacturing, including trade unions, should form part of the Bank's board.

### 3.6 ENGAGED UNIONS DRIVING THE JUST TRANSITION

One of the central issues with the historic decline in manufacturing – and the threats to its long-term survival as a cornerstone of the Scottish and UK economy – is that jobs in manufacturing are usually relatively well paid, unionised, and ‘high-quality’. Scotland must not ‘trade this off’ as it seeks to maximise domestic benefit.



It is the engagement and power of the union movement that has historically worked to ensure that conditions are introduced nationally and enforced at the employer level. Trade unions are central to delivering on the Green New Deal and their role in the processes, institutions and policies that will support it must reflect this centrality. Unsurprisingly, given the centrality of unionised work to the challenges and opportunities faced by decarbonisation, trade unions in Scotland have shown themselves to be particularly engaged and proactive on delivering the supportive policy and institutional landscape needed to deliver a genuinely just transition<sup>72</sup> and enduring employment in industries such as renewables manufacturing. Their engagement is critical to ensure that jobs are not just 'green' but also 'good' (see Box 4). We have heard however that capacity is a key issue – both for trade union representatives themselves, and also within firms for whom reskilling for renewables supply chains may carry a significant short-term opportunity cost.

#### **Box 4: 'Good jobs'**

It is not enough to simply boost jobs in renewable energy supply chains – or indeed any part of a Green New Deal economy – without taking measures to ensure that they are 'good' jobs. Scotland's Fair Work principles<sup>73</sup> must not be traded off, and it is essential that industrial strategy and support programmes do not force 'good' Scottish jobs to compete on raw cost grounds with less 'good' jobs elsewhere.

Findlay's 'four dimensions' are a useful yardstick to assess job quality:<sup>74</sup>

- **Tasks:** such as the training available in work and physical working conditions;
- **Employment:** including levels of pay, opportunities for progression, and work/life balance;
- **Relationships:** such as perceptions of trust, fair treatment and confidence in management;
- **Governance:** relating to opportunities for meaningful involvement and voice as well as fairness and consistency in the workplace.

The growing movement for a shorter working week is an important additional dimension to this. Full-time jobs on shorter hours (for example in the form of a four-day week) and without a reduction in pay should be viewed as a part of a broad conception of good work. Temporary reductions in working time, supported via a national Just Transition Fund (see below), could also be a key mechanism to allow manufacturing workers to reskill if necessary.

The Scottish Government should:

- **Create a Just Transition Fund to provide the time and resources workers need to proactively engage with the realities of transition.** Employers and local authorities would bid into the fund, as key parts of place-based industrial strategies, to allow workers to retrain and reskill for the transition. Trade unions could also bid into the fund to support the time for elected representatives of affected workforces to engage with the processes and policies needed to hold employers – and indeed the government itself – to account. For the latter, one model is the UK Union Modernisation Fund, which ran from 2005-2010 and awarded £7million to unions to support internal projects to improve union ‘effectiveness’.<sup>75</sup>
- **Embed the principles of the Just Transition into the remit of all agencies** (such as the SEDA) making decisions about renewables consenting and manufacturing in Scotland. The existing Just Transition Commission – a model of ‘social dialogue’ that few other parts of the UK can boast – **should be placed on a statutory footing and enshrined within the Climate Change Bill**, to demonstrate Scotland’s ongoing commitment to championing high quality domestic employment in sectors such as manufacturing.



## 4. CONCLUSION

This report's limited scope has focused primarily on wind power, as it has looked back to the recent past to draw lessons for the future. It is vital to note that the principles set out in this paper should guide the development of a supportive infrastructure for the full range of clean technologies. As earlier statistics showed, energy efficiency dominates the current LCRE sector and will continue to be a bedrock of delivering on a Green New Deal. Renewable heat industries, from biomass to heat pumps, will need to scale massively, creating significant potential for Scottish industry.

The headline conclusion from this report is that lessons must be drawn from the past – not just the past decade, and the way in which subsidy regimes have been constructed and delivered, but from the decades before that. The countries that are securing the most value from global supply chains in clean energy are those that have prioritised as delivering cutting edge, employment-rich jobs in clean industries.

**As outlined in this report, Scotland should adopt five key principles in the industrial strategy it devises to deliver on its climate and economic aspirations:**

1. Doing all that it can to expand ever further its own renewable energy generation;
2. Actively supporting Scottish industry to win contracts and invest for the future;
3. Ensuring enabling finance from the National Investment Bank to underpin future manufacturing;
4. Empowering places to construct local industrial strategies around the assets, skills and specialisms of that place;
5. Embedding just transition principles and the importance of good jobs into industrial strategy and support.

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- <sup>73</sup> Scottish Government, 'Policy: Employment support', retrieved July 2019 from <https://www.gov.scot/policies/employment-support/fair-work-and-pay/>
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