



## **IRMP 21-25 Risk Review; Diversification in Agriculture.**

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### **Executive Summary**

- Agriculture is in a period of uncertainty and Shropshire is vulnerable to changes from BREXIT and subsidies this may have a negative impact on the local economy. If financial pressures increase then derelict farms and outbuildings may increase, presenting arson and organised crime opportunities.
- Diversification has been carried out by 60% + of agriculture which in turn covers 80% of the county. The life risk associated with this diversification is spreading throughout the County. This will further contribute to the flattening of risk and the ripple of incidents moving away from the large urban areas.
- Technology associated with renewable energy presents a new and increasing risk in rural areas. These include high voltage electricity, explosion risks, toxic materials, and criminal value from installed hardware and the raw materials used in construction. In 2020 five fire appliances attended an incident at a renewable energy business. We would anticipate deployments of this type to increase.
- As farming diversification moves towards tourism more consumers will be drawn to areas and exposed to activities and processes that they are not necessarily familiar with. The support infrastructure will also increase putting pressure on the existing networks. This changing dynamic might influence future On-Call recruitment and retention.
- An increase in demand on the Protection Team. Increased amounts of rural business will mean more audits, planning consultations and complaints to process.

## Findings

### The Scale of Diversification

The National Union of Farmers, (NFU) define diversification as using a farm's assets, such as its land, buildings or machinery, to develop a new business activity beyond farming the land.

NFU and Defra data suggests over 60% of UK farms have diversified <sup>[1]</sup>

Shropshire's rural risk is changing with farming diversification leading the way. An increase in tourism and renewable energy projects across the county are at the forefront of this change.

Shropshire has the sixth-largest number of farm holdings out of all 74 county and unitary authorities.<sup>2</sup> Shropshire has over 3,700 farms covering approximately 81% of the county.<sup>3</sup>

### Agriculture Statistics.

- 7% rise in the number of farm holdings in Shropshire between 2013 and 2016 due to a rise in smaller farms.
- A long-term decline in the number of holdings since 2005 and a fall in the number of smaller farms as larger farms take over smaller ones.
- A decrease in the amount of farmland between 2013 and 2016 due to a small decline in larger farms over 100 hectares and an increase in smaller farms.
- The long-term trend shows the amount of farmland has remained reasonably constant. The majority of farmland in Shropshire was grassland (60%) followed by cereals (27%).
- The majority of livestock was poultry (86%) followed by sheep (10%).
- An increase in farmworkers between 2013 and 2016, a third of which are farmers.

### What does this changing risk mean to SFRS?

More life risk in areas which previously only had a local population risk. More tourism meaning more rural traffic often on unlit minor roads. People visiting the area who are unfamiliar with the location and its potential hazards.

More business that falls under Planning Regulations and or the Regulatory Reform Order placing a greater burden on the Protection Team.

An inevitable increase and diversification in emergency incidents as people and activities increase in areas previously exclusive to agriculture.

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<sup>1</sup> Defra Farm Business Study 2016/17

<sup>2</sup> Results of the Defra June Survey of Agriculture (Released January 2018, Defra Farm Statistics, UK)

<sup>3</sup> Results of the Defra June Survey of Agriculture (Released January 2018, Defra Farm Statistics, UK)

## **Farm Economics**

With direct farm subsidy payments set to fall after 2021, (support will reduce by at least 14% a year and by more for larger farms), farmers are looking at ways to boost their incomes and make their farms sustainable. The future of farming will undoubtedly be influenced in part by the outcomes of the final UK Brexit agreement. This is likely to result in changes within the sector in connection with leaving the Common Agricultural Policy, changing trade agreements with the EU and also new global trade relationships and uncertainty around the farm subsidies currently received from the EU.

A 2018 Diversification Survey carried out by the NFU found that two-thirds of farmers have already diversified. This is supported by Defra. The NFU think the figure could be higher as many farmers do not consider Agri-contracting and other enterprises closely linked to farming as diversification<sup>[4]</sup>

Top choices for farmers now planning to diversify are:

- 27% caravan/camping site
- 20% of other holiday accommodation
- 20% renewable energy

## **Diversification Statistics.**

- 19% of non-diversified farms will definitely or probably diversify in the future
- 15% of diversified farmers opted for a property letting enterprise. Property letting makes good sense on farms with buildings available for conversion, and are located where people want to work, live or holiday.

## **Renewable Energy**

The adoption of renewable energy has political momentum in Shropshire. The policy of Shropshire Council is to encourage a local uptake of the industry.

National Grid capacity is an issue in Shropshire which could affect current and future development sites. Shropshire Council is exploring opportunities for the microgeneration to unlock larger development sites, cost-effective solutions for the distribution of energy generated from low carbon and renewable energy sources to customers, and options to combine power generation with energy storage.<sup>5</sup>

Shropshire Council is exploring options to promote energy efficiency and renewables use in enterprises through loans for investment in energy efficiency measures and processes. Such options include how to encourage landowners and businesses to install renewable energy generation facilities, storage and delivery, and exploration of

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<sup>4</sup> NFU Diversification Survey 2018

<sup>5</sup>Shropshire Council Corporate Plan 2019/20 to 2021/22

schemes that "buy" energy from local suppliers and sells to Shropshire businesses at a financially attractive rate.

This is not necessarily limited to electricity and could be biogas for heating and fuel, recognising the reality for rural households and businesses who live off the grid.

## **Biomass-energy**

Is generated from burning raw organic waste which can be converted into products such as steam, biodiesel and biofuels. It can also be converted into gasses such as ethanol and methane and electricity. These products can then be used in either a residential, industrial or agricultural setting. A farm can be a huge provider with multiple biomass sources and is becoming ever more popular. With farm diversification on the increase BIOMASS production across Shropshire is increasing.

Biomass fuel has a wide range of possible refuse items: pellets, chip logs, forestry, sewage sludge, methane, meat and bone, palm kernels, cereal, sawdust, bioenergy crops, or landfill gas.

When a biomass fuel is stored in a pile, waiting for transport or use, the biomass can spontaneously heat through oxidation. Biomass creates dust and is vulnerable to the risk of dust explosions if maintenance and housekeeping are not appropriate. The process also has a risk of boiler fires.<sup>6</sup>

## **Anaerobic digestion**

Is a chemical process that incorporates gas handling and gas storage. Such sites create electricity and heat. Such sites are also becoming more common in Shropshire.

When manure is anaerobically digested, the biogas produced is primarily composed of methane and carbon dioxide, with lesser amounts of hydrogen sulfide, ammonia, and other gases. Each of these gases has safety issues. Overall, biogas risks include explosion, asphyxiation, disease, and hydrogen sulfide poisoning. Extreme caution is necessary when working with biogas.

Due to the technical nature of Anaerobic Digestion and Biomass processes and the composition of the fuel, consideration of health and safety regulations is required.<sup>7</sup>

## **Solar Farms**

Following changes, including in some cases the loss of government subsidies for renewable energy, are seen as a "without subsidy" way to achieve economies of scale and deliver considerable zero-carbon electricity to the grid. The scale of these

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<sup>6</sup> BRE; The Fire Risk of Renewable Energy Regeneration 2012

<sup>7</sup> <https://www.hse.gov.uk/waste/disposal.htm>

developments can be vast with landowners, like farmers, investing in this renewable energy provision.

The risks posed to firefighters mainly revolve around fires and electricity. The causes of which are diverse. Vandalism and theft are becoming an increasing issue to these often, remote locations.

The likelihood of a solar farm fire appears to be low, as of January 2017 only 5 fire incidents on English solar farms had been reported, however, the industry is relatively new, and the impact of factors such as theft is yet to be fully established.<sup>8</sup>

The increase in people and logistics that support this industry will, like tourism, increase the usage of infrastructure across the county, most notably the rural areas.

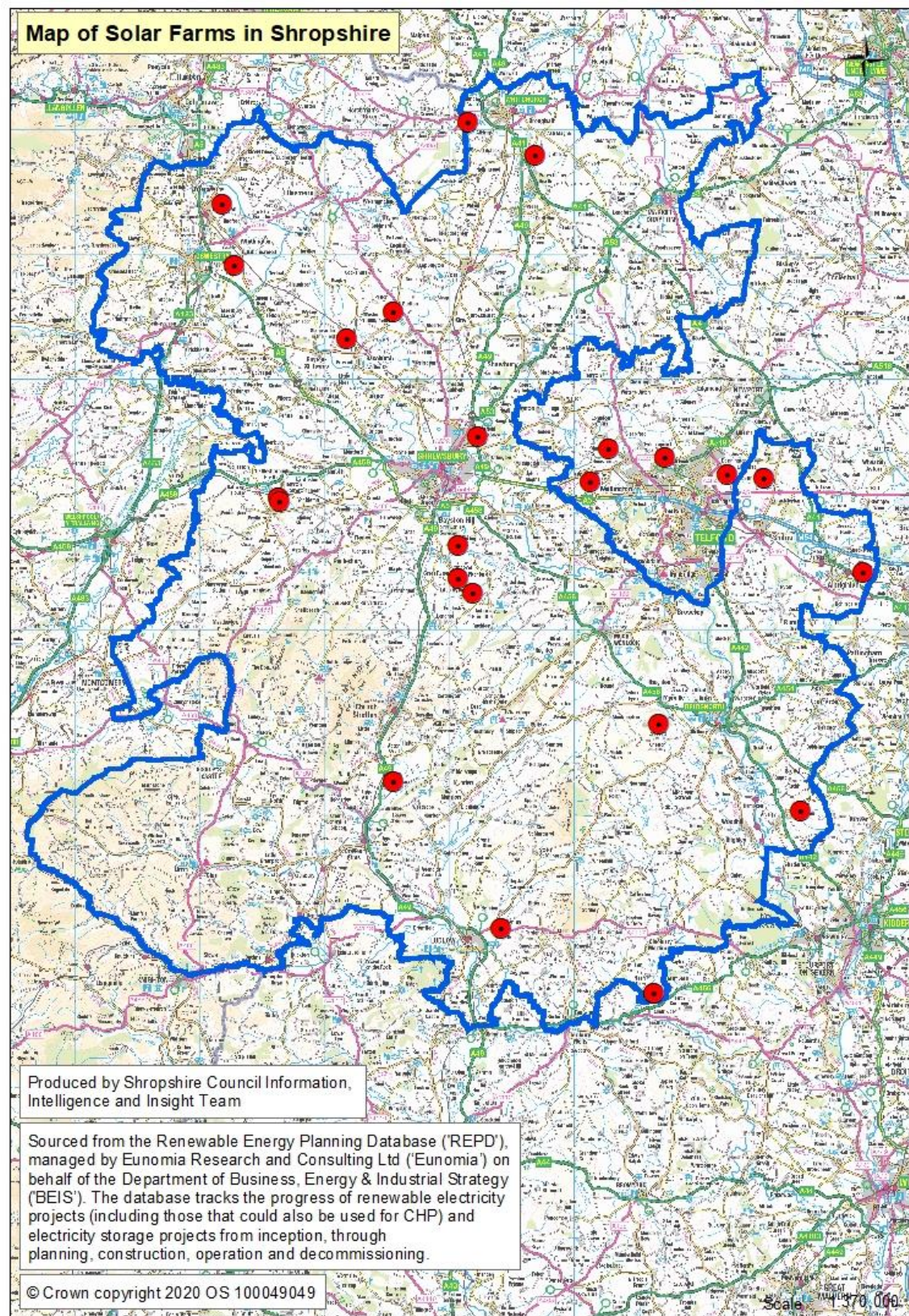
Attending fire crews require appropriate training to respond effectively and safely.

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<sup>8</sup> BRE Fire and Solar PV Systems Recommendations to the Fire Service 2017



## Data and Graphs





## BIOMASS and Renewable Energy sites in Shropshire

