

**INPUT TO BEIS SELECT COMMITTEE ON UK SEMICONDUCTOR INDUSTRY BY IAN DEVINY  
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1. Power semiconductors, particularly the high voltage type ie 650v and higher, have been key to the growth in electricity power generation, industrial and domestic power supplies, and motor drives.
2. The UK has had a strong manufacturing capability for very high voltage (3300v+) power distribution components which tends to be major multi year project based using custom designed products.
3. Although the technical and manufacturing capability to make standard (common) products (bipolar transistor, MOSFETs and IGBTs for example) has been present in UK locations run by foreign companies (International Rectifier, Nexperia, National Instruments) no UK companies have successfully grown their business in these areas.
4. Power semiconductors have been a steady market for several UK companies over the past 30 years however more recently the growth of these companies has been limited due to foreign company acquisition for their IP value followed by the lack any UK investment to grow UK based manufacturing.
5. Specific examples would be Infineon (Germany) takeover of International rectifier in Wales (Newport wafer fab being part of this) for the IP value in its Gallium Nitride transistor technology, CRC (China) takeover of Dynex semiconductor for its IGBT technology, IXYS (Germany) takeover of Westcode for its high voltage Thyristor technology.
6. It has then been the practice to try to sell off the remainder of these companies at below market prices to dispose of them.
7. However, the cycle of facility disposal at low prices then becomes an opportunity for a new company to acquire them for their own financial benefit. Nexperia at Newport, Wales is an example, where new investment at the site will improve prospects for employment and UK trade that then the situation becomes better than was there before.
8. This is an example of how the value of indigenous skilled workforce and renewal of existing manufacturing facilities in the UK can be used to perpetuate the UK semiconductor presence in these markets.
9. This cycle of reinvestment can however be assisted by government initiatives. Of particular concern is access to the latest equipment. The technology is very much driven by photolithography for example however unit costs of these machines is many millions of pounds. There would be a significant benefit if UK industry could have access to such equipment without the need for the full capital cost expenditure at the outset.
10. An example of a solution might be a UK centre of excellence for semiconductor wafer processing technology where companies could have access in a production environment to the latest equipment at a suitable commercial rate. This might be funded by government loan secured on the value of the equipment itself. Also there may be special arrangements

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possible with the equipment manufacturing companies themselves to loan or consign this equipment.

11. Because of the nature of running and maintaining this type of equipment, the location for it probably needs to be in an annex to a running wafer fab that can provide all of the services needed.
12. As the equipment is owned by a non commercial organisation there is no concern about asset loss by company buy out.

Ian Deviny, 14<sup>th</sup> June 2022