

# THE ECONOMIC IMPACT OF BAD WOLF

THE FIRST FIVE YEARS:  
2015 - 2020

Saffery Champness  
CHARTERED ACCOUNTANTS



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FOREWORD BY JANE TRANTER

In 2015 Julie Gardner and I launched Bad Wolf. Our ambition was to create a world-class independent production company, delivering high-end television drama to large audiences across the globe.

*‘The Bad Wolf vision in Wales has always been to build a consistent production hub for large scale drama...’*

After an excitingly fast-paced five years, it seemed a good point in the company's development to pause and reflect on what had been achieved - and consequently we commissioned this impact report. It covers only the period from the inception of Bad Wolf to the end of December 2020 - the considerable additional gains and impact during 2021 are not as yet reported.

For Julie and I, our intent when establishing Bad Wolf was to utilise the skills and full breadth and depth of the considerable experience we'd gained working in both the UK and the US to build global drama brands with broadcasters; and through our passion for making drama with a wide range of the world's best creative talent.

In 2005, while at the BBC, Julie and I had made the decision to produce the newly re-booted *Doctor Who* in Cardiff. The success of this in turn led to us making and setting up *Torchwood*, *The Sarah Jane Adventures*, *Casualty* and *Sherlock* in the country. When we moved to Los Angeles to start up BBC Worldwide Productions and Adjacent Productions, we opted to produce three seasons of *Da Vinci's Demons* for Starz Worldwide back in Wales, in Swansea.

Ten years later when it was time to start our own company, we had a clear vision that Bad Wolf and its productions would - and should - be based in Wales. Our tangible experience of producing 100+ hours of high-end drama in the nation meant we knew and respected its crew base and creative and production teams, and all that its locations and community offered.

As a start-up business with global ambitions, Bad Wolf inevitably required investment.



We knew that any private investor would insist the company and its productions be based more traditionally where the broadcasters, agents and majority of talent are based. In centres such as London or Los Angeles, as opposed to Wales. So, instead of seeking private investment at this stage, we went to the Welsh Government and asked for investment in return for locking us, and our spend on productions, into building our company in Wales.

Julie and I were aware that the Welsh Government gave grants to productions that filmed in Wales. For Bad Wolf, we agreed a deal with the Welsh Government that would give us no more than if Bad Wolf had applied for the normal grants available on each individual production. Instead, the deal guaranteed £133 million of production spend in Wales over the long term. It also ensured that the Bad Wolf headquarters would be based in Wales, as would its commitment to training and, although we didn't know it at that time, it would also result in us building a fit for purpose, world-class high-end television and film studio in the Nation. This innovative deal with Welsh Government would ensure grants led to long-term sustainable jobs and production spend in Wales.

Once we had set up the company in Wales it quickly became clear that producing drama of the scale of *A Discovery of Witches* and *His Dark Materials* – often with complex VFX components – required a bespoke studio of the scale and size that Wales didn't have. So, in partnership with the Welsh Government, in 2017 Wolf Studio Wales was conceived and built to house our ambitious dramas and allow us to find new ways of achieving cinematic production values on television budgets.

The Bad Wolf vision in Wales has always been to build a consistent production hub for large-scale drama, ensuring that we are in various forms of production for 52 weeks of the year, offering job security, career development and training programmes for production and post-production talent.

The first production since launching was *A Discovery of Witches* for Sky and AMC, followed quickly by *His Dark Materials*, an adaptation by Jack Thorne of the acclaimed novels by Philip Pullman for HBO and the BBC, starring James McAvoy, Ruth Wilson, Dafne Keen and Lin-Manuel Miranda.

Since launching, Bad Wolf has grown a domestic and global reach that has made it one of the UK's most successful independent production companies and in the 2021 Broadcast Indie Survey, Bad Wolf was listed as the most successful fully independent production company and the most successful indie operating outside of London and the South East of England.

This review demonstrates the scale of Bad Wolf productions is unprecedented in Wales and, during the period that this review focuses on, we have produced seven seasons and 49 hours of high-end television in Cardiff, with more to come in 2021.

Since inception, Bad Wolf has had a combined production budget of over £259 million – of which £121.8 million was spent in Wales at the time of this report. The company's achievements were recognised with three Fast Growth 50 Awards in 2020 and this has enabled us to repeatedly prove our commitment to invest in local

employment and businesses, becoming the biggest creator of new jobs in any sector in Wales' Fast Growth 50 list in 2017-2019.

The additional economic activity stimulated in Wales by Bad Wolf productions generated 1,682 Full-Time Equivalents (FTEs) and £85.5 million in Gross Value Added (GVA) for the Welsh economy.

In 2019 Bad Wolf America was formally established to develop and build on bespoke opportunities in the US marketplace.

Alongside our production work, we additionally wanted to find a way to help grow the creative and production communities in Wales and to nurture a creative environment which would allow Bad Wolf, amongst other companies, to grow and prosper for years to come.

To this end, Bad Wolf has invested in training and education through Screen Alliance Wales. Our studio classroom, based at Wolf Studios Wales, and our on-site education centre have allowed young people access to see productions in action and to learn about drama production, including the myriad of jobs available in the creative sector.

To date, over 2,000 school students have been into the studios and, despite Covid-19, this work continues in schools today. We have taken on graduates in animation, design and coding to work on our productions, mutually benefiting from their emerging new skills and our experience.

Additionally, we have created a philanthropic programme for various organisations to support training and access, including It's My Shout, Hijinx and The Other Room theatre companies, the Iris Prize and Royal Welsh College of Music and Drama.

In 2019 Bad Wolf won Best Company for New Talent at the Edinburgh Television Festival New Voice Awards. Building relationships with local higher education partners like the Royal Welsh College of Music and Drama and the University of South Wales is vital to Bad Wolf's commitment to longevity within the creative industries.

Bad Wolf is, of course, only as good as the people it employs and we pride ourselves on continuing to build an exciting, creative, inspiring and safe arena for its committed, passionate and loyal staff and freelance employees to work in - both in front and behind the camera, on the production floor or in the office.

The company's continued success depends on this talented group of creatives and technicians - the producers, writers, directors, production designers, art directors, location managers, cameramen - and their being able to go on from Bad Wolf to create their own programmes, set up their own businesses, use their own contacts with the global television industry to carry the baton forwards and ensure that their generation, and the one behind them, can see that there is a future for themselves here in Wales.

With our 100% success rate for re-commissions, vibrant development slate and strong relationships with talent and broadcasters, Bad Wolf is committed to building its base and looks powerfully placed for continued growth, investment and new adventures for the next decade.

With all the successes of the company to date, it is important to note that Bad Wolf has not reached the end of the journey, but just the end of its first act. Having achieved the objectives and goals set for the first five years and begun to create a distinctive Bad Wolf 'signature', we see this as the optimal time to focus on our future development path and we are clear and focused on our next stage of corporate strategy.

# KEY FINDINGS

- On turnover, Bad Wolf was the UK's largest independent production company operating outside of London or the South East of England in 2020.<sup>1</sup>
- In 2019, Bad Wolf ranked first in Wales' Fast Growth 50<sup>2</sup> – recognising the very high rate of growth it achieved between 2016 and 2018 (2,668% growth in turnover). Bad Wolf has continued to grow fast and ranked fifth in the 2020 edition of the Fast Growth 50.<sup>3</sup>
- The scale of Bad Wolf productions is unprecedented in Wales. Between 2015 and 2020, Bad Wolf spent a total of £259 million on the production of seven seasons of television – *A Discovery of Witches* seasons 1, 2 and 3, *His Dark Materials* seasons 1 and 2, *Industry* and *I Hate Suzie*.
- For each £1 million invested by the Welsh Government, the Welsh economy has benefitted from £9.5 million in additional gross value added (GVA) and 187 full time equivalents (FTEs) of additional employment.
- Bad Wolf's spending on local employment and businesses has yielded substantial economic benefits for the Welsh economy. On a gross basis, it created a total of 2,243 FTEs of employment between 2015 and 2020, along with £114.0 million in GVA for the Welsh economy.
- The additional economic activity stimulated in Wales by Bad Wolf productions generated 1,682 FTEs and £85.5 million in GVA for the Welsh economy (i.e. the loss to the Welsh economy were Bad Wolf not located in Wales and not using Welsh crew and services).
- Bad Wolf was the biggest creator of new jobs in any sector in Wales' Fast Growth 50 list in 2017-2019, creating 58% more jobs than the second company in the list.
- Bad Wolf created 826 FTEs in principal photography for Welsh crew between 2015 and 2020. These Welsh crews earned £29.3 million from work on Bad Wolf's projects. It has employed an estimated 369 individual Welsh residents as crew.
- A large proportion of Bad Wolf's expenditure stays in Wales. Around 47% of its production spending (amounting to £121.8 million) was for payments to labour, suppliers and intellectual property holders based in Wales.
- A further £7.5 million of expenditure in Wales resulted from Bad Wolf's corporate operations (including the operation of Wolf Studios Wales) between 2015 and 2020.
- 81% of Bad Wolf's local suppliers report that they had experienced higher turnover since 2015, at least partly due to their business with Bad Wolf.
- Bad Wolf has been a significant factor in encouraging creative businesses to locate in South Wales. 39% of local suppliers said that their decision to locate or relocate to South Wales was because of Bad Wolf being based in the area.
- Bad Wolf and Screen Alliance Wales have created training programmes that have so far involved 2,017 work placements; 51 traineeships; and 122 new roles facilitated on productions in Wales.

<sup>1</sup> Broadcast (2021), "Indie Survey Table 2021", Broadcast, 25 March 2021.

<sup>2</sup> Fast Growth 50 (2020), "2019 Fast Growth 50 Awards".

<sup>3</sup> Fast Growth 50 (2021), "2020 Fast Growth 50 Awards".

# EXECUTIVE SUMMARY

Bad Wolf has grown dramatically during the past five years of its inception. In terms of turnover, Bad Wolf is now the fifth largest independent production company in the UK, the largest independent production company with a headquarters outside London and the sixth largest independent company in the UK producing scripted productions.<sup>4</sup>

**'Bad Wolf has gone beyond the dreams of politicians – it has been a really successful intervention by Government.'**

Berwyn Rowlands, Iris Prize

The economic impact of Bad Wolf on the UK economy has been significant.

Between 2015 and 2020 Bad Wolf's production activities generated £283 million in gross added value (GVA) for the UK economy. However, it has been the particular decision taken by the founders of Bad Wolf to base the company's headquarters, and all its productions, in South Wales that has resulted in the greatest economic impact.

Bad Wolf produces high-end television (HETV) drama series. This involves very large budgets over several seasons – often spanning many years. In Wales, this has created a sustainable sector and environment for creative supply chain businesses, rather than one that relies on productions that come to Wales for a few months and then leave.

Bad Wolf has anchored itself and its productions in Wales and this has created millions of pounds of spend, year after year. This, in turn, has created long-term consistency of opportunity that is adding to the potential growth of the industry. As a result, many small creative companies and freelancers have been established or found their feet and developed in South Wales through opportunities created by Bad Wolf.

## TOTAL ECONOMIC IMPACT IN WALES

After taking account of deadweight, displacement and leakage, our analysis found that the additional economic activity stimulated in Wales by Bad Wolf productions generated 1,682 full-time equivalents (FTEs) of employment and £85.5 million in gross value added (GVA) for the Welsh economy between 2015 and 2020. (This represents the loss to the Welsh economy were Bad Wolf not located in Wales and not using Welsh crew and services.)

## IMPACT ON THE SUPPLY CHAIN IN WALES

Bad Wolf's emphasis on using local crews and suppliers has ensured that a large proportion of its expenditure stays in Wales. Approximately 47% of production spending (amounting to £121.8 million) was for payments to labour, suppliers and intellectual property holders based in Wales. A further £7.5 million of expenditure in Wales resulted from Bad Wolf's corporate operations (including Wolf Studios Wales) between 2015 and 2020.

Not only the scale, but also the security of spending, has generated economic benefits to businesses across the production services supply chain in South Wales. Indeed, 81% of Bad Wolf's local suppliers report that they had experienced higher turnover since 2015, at least partly due to their business with Bad Wolf.

## IMPACT ON TALENT DEVELOPMENT AND TRAINING IN WALES

In a manner that is unique to television companies in the UK, Bad Wolf has put in place significant structures to encourage new entrants to the industry and develop talent. Bad Wolf created and is a core funder of the activities of Screen Alliance Wales (SAW). This is to ensure that talent and specialist crew are continually being identified and trained by the best in the industry – growing the South Wales region's talent supply chain as Bad Wolf grows.

Bad Wolf also commits to a minimum number of trainees on all its productions and has created a bespoke classroom at

<sup>4</sup> Broadcast (2021), "Indie Survey Table 2021", Broadcast, 25 March 2021.

***‘The impact of Bad Wolf has already been massive and is the start of something bigger for the creative industries sector in Wales.’***

Dylan Jones Evans,  
University of  
South Wales

Wolf Studios Wales to ensure that as many young people as possible see how television is created and have doors opened to the possibilities of working in the industry.

#### **IMPACT ON THE CREATIVE INDUSTRIES IN WALES**

The presence of Bad Wolf has helped South Wales to develop a reputation as a filmmaking destination with an international ethos, confidence and product. According to survey research, 81% of local businesses said that there are more opportunities for people and businesses working in the creative sector in South Wales at least partly as a result of Bad Wolf being located in the area. Bad Wolf has also been a significant factor in encouraging creative businesses to locate in South Wales. Indeed, 38% of Bad Wolf’s local suppliers said that their decision to locate or relocate to South Wales was at least partly because of Bad Wolf being based in the area.

#### **WHY WALES?**

The model for most UK independent scripted production companies is to have a small and lean headquarters in close proximity to broadcasters, core talent and their agents (usually in London) and then each production they make is taken to different countries around the world depending on scripts, locations, crew availability and the incentives.

In direct contrast to this model, the founders of Bad Wolf, Jane Tranter and Julie Gardner, decided to set up Bad Wolf differently and to challenge the norm – making a commitment, up front, to make all the company’s shows in Wales.

Jane and Julie both had long and successful careers at the BBC, and during their tenures at the broadcaster they brought *Doctor Who* to Wales and then *Da Vinci’s Demons*.

Through this experience of working in Wales, Jane and Julie understood the importance of experienced crew and service companies and had seen first-hand the significance of on-set experience.

For these reasons, and more, the founders wanted to base their company and all production activity in Wales.

#### **WELSH GOVERNMENT AS A STRATEGIC PARTNER**

At the same time that Bad Wolf was starting up in Wales, the Welsh Government launched a new creative industries strategy that, for the first time, recognised the economic impact of the creative industries, and the impact that television drama specifically could have on jobs and the GVA in Wales.

The Welsh Government, like many governments worldwide, has offered grants to attract producers to shoot productions in Wales. Although these productions would bring economic benefits, they did not guarantee future or returning series and so were potentially limited in their long-term economic impact.

The investment that the Welsh Government made into Bad Wolf, however, was based on the company being encouraged to create a permanent base and long-lasting commitment.

Since Bad Wolf and the Welsh Government established their partnership in 2015, the scale of Bad Wolf productions has been unprecedented in Wales. Between 2018 and 2020, Bad Wolf spent a total of £259 million on the production of seven television seasons – including two returning series. These three big budget, high-quality shows, running over many years, have created a secure environment for investment and talent development in Wales.

Through its creativity, risk-taking and investment in local suppliers, Bad Wolf has employed and developed local talent, enabled local businesses to prosper and provided new opportunities for the growth of the creative sector not only in South Wales, but throughout the whole of the UK.

The effect of Bad Wolf’s headquarters and productions being based in Cardiff has been

***‘Wales is now on the map for HETV thanks in no small way to Bad Wolf. The commitment made by Bad Wolf in the Wales supply chain has led other high-end productions to follow with confidence.’***

Rich Moss,  
Gorilla

***‘Wales has too few industries of real international scale. Bad Wolf is one of them.’***

Rhodri Talfan Davies,  
BBC Cymru Wales

to grow a small and nascent screen cluster in South Wales into a significant industry. After five years based in South Wales, this report assesses the economic, social and cultural impact of Bad Wolf’s activities.

#### **RETURN ON PUBLIC INVESTMENT**

As a strategic partner, the Welsh Government committed £9 million to Bad Wolf over five years in exchange for £133 million of Welsh spending. The £9 million in total funding from the Welsh Government consisted of a £4.5 million repayable advance (paid up front in instalments) and a £4.5 million grant paid on achievement of milestones for Welsh spending.

As of December 2020, Bad Wolf had already achieved £121.8 million of the Welsh production spend required by its agreement with the Welsh Government. Our analysis indicates that this £121.8 million in Welsh production spend generated an additional £85.5 million in GVA for the Welsh economy between 2015 and 2020. In other words, for each £1 million invested by the Welsh Government, the Welsh economy has benefitted from £9.5 million in additional GVA. We also calculate that each £1 million invested has led to 187 FTEs of additional employment.

#### **BAD WOLF’S WIDER SOCIAL AND CULTURAL DEVELOPMENT**

The economic impact of Bad Wolf includes, but goes beyond, its record of local job creation and economic contribution to Wales. Bad Wolf is generating rich and exciting opportunities that have the potential for social and cultural impact for years to come.

Wales has areas of severe economic deprivation and lack of opportunity, where there is a need to support communities who would never consider a career in film. The existence of Bad Wolf helps to broaden people’s horizons and create new aspirations. Genuine access to the possibility of education, training and employment in a globally competitive, export-oriented industry like HETV production helps to tackle this economic inequality.

Equality of opportunity is at the heart of the Bad Wolf ethos and it actively seeks to nurture new and emerging talent and promote diversity in the screen industries.

The publicity and the reputation of Bad Wolf has been a platform to showcase Cardiff and South Wales. This has helped to rebrand the city as a great place to live, work and do business and provide a foundation for the future economic development of South Wales.



## INTRODUCTION

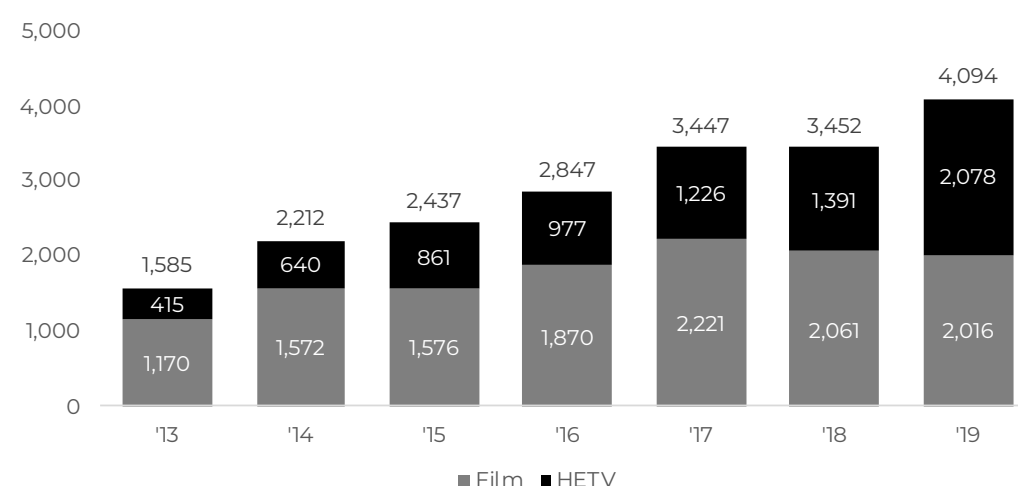
For well over a decade film and television production has not only been an engine of economic growth within the UK's creative industries, but also for the wider UK economy. Following the introduction of tax relief for High-End Television (HETV) production (i.e. television production with budgets over £1 million per broadcast hour), the value of annual spending on film and HETV production in the UK increased from £1.6 billion in 2013 to £4.1 billion in 2019 – an average annual growth rate of 17.1% (Figure 1).

### 1.1 FILM AND TELEVISION PRODUCTION IN THE UK

Indeed, in the space of only six years, the annual value of HETV production in the UK increased five-fold – from £415 million to nearly £2.1 billion. In 2019, the total value of HETV production in the UK exceeded the value of film production for the first time. This achievement was driven in large part by the UK's ability to successfully position itself as a leading supplier of content to growing global subscription video on demand (SVOD) services, including Netflix, Amazon Prime Video, Disney+, HBO Max and Apple TV+.

**Figure 1:**  
2020 UK  
expenditures  
on production  
supported by Film  
Tax Relief and High-  
End Television Tax  
Relief (£m)

Source: BFI



With the onset of the Covid-19 pandemic and the first lockdown in March 2020, most film and television production in the UK was shut down. However, the industry responded quickly, and with the development of safe practices and protocols endorsed by the Government and Public Health England, a large proportion of film and television production was able to resume safely in July 2020.

Statistics released by the British Film Institute (BFI) for 2020 indicate that the UK's screen sector finished 2020 with strong tailwinds. Following the four-month pause in physical production in the first half of 2020, there was a strong bounce-back for film and HETV production in the second half of the calendar year. Indeed, with £1.2 billion in production spending in Q4 2020, the UK set a new record for its quarterly level of film and HETV production activity.<sup>5</sup> Despite disrupted production schedules, production spend for the entire 2020 calendar was just 21% down on 2019's record levels.<sup>6</sup>

<sup>5</sup> BFI (2021), "Film, high-end television and animation programmes production in the UK: full-year 2020", 4 February 2021, p. 1.

<sup>6</sup> BFI (2021), p. 1.

Spend on HETV production in the UK in 2020 was £1.49 billion, just 11% lower than the £1.67 billion reported for 2019 (updated mid-year to £2.09 billion and the highest HETV spend on record). Inward investment and co-production HETV accounted for £1.13 billion or 76% of the total HETV spend. Even allowing for the impact of the pandemic on halting production activity, the 2020 HETV spend was the second highest annual total on record.

Historically, the majority of film and television production in the UK has been concentrated in and around London and the South East of England. Indeed, according to industry trade body the Producers' Alliance for Cinema and Television (Pact), London accounted for 66% of the UK production industry's primary commissioning revenue in 2017; by 2019, however, the share had declined to 57%.<sup>7</sup>

In recent years, through the business and creative vision of two British producers and the strategic investment made by the Welsh Government, Wales has played a key part in the UK's HETV growth story and the expansion of production outside of London. This has largely been through Cardiff-based Bad Wolf – the independent scripted production company founded in 2015 by Jane Tranter and Julie Gardner, with the aim of creating ambitious and imaginative high-end drama in Wales for audiences around the world.

### 1.2 HISTORY AND FORMATION OF BAD WOLF

In recent decades, the beauty and natural resources of Wales have led to the country being used as a location for productions from *Clash of the Titans* to *Harry Potter*. But these productions were seldom crewed from Wales. The lack of a local industry meant that when filming in Wales, crew and performers often had to be brought in from London or Bristol or internationally; these cast and crew then returned home without leaving a legacy of benefits. Indeed, up until recently, it was clear that the screen sector in Wales lacked a creative and economic anchor and was therefore not optimising its potential.

In 2008 Jane Tranter and Julie Gardner were asked to move to Los Angeles to run BBC Worldwide Productions, making over a thousand hours of television during their time there. The first major drama that they made whilst in the US was *Da Vinci's Demons*, which they filmed at Bay Studios in Swansea, after having scouted locations all over the world.

In fact, Jane and Julie had worked extensively in Wales since 2003 when, as BBC Drama Commissioner, Jane decided to bring *Doctor Who* to Cardiff and film five seasons there with Julie as Head of Drama for BBC Wales.

This led, in many respects, to a renaissance in television drama production in Wales, with *Torchwood*, *The Sarah Jane Adventures*, *Sherlock*, *Atlantis*, *Merlin* and *Casualty* all filming in Cardiff.

This gave those who took note a taste of the potential for what high-quality television production could offer in terms of creating employment and inspired the Welsh Government's strategy to focus on the potential to further develop the screen sector in Wales.

**Jane and Julie's experience in Wales, and belief in its production community and crew, led them to explore the possibility of locating a new production company in Wales. Seven years later, in 2015, their vision finally came to fruition with the formation of Bad Wolf.**

### 1.3 WELSH GOVERNMENT INVESTMENT

To realise their ambitions, Jane and Julie worked in partnership with the Welsh Government. In 2010, the Welsh Government had identified the creative industries as one of the key sectors that would drive the whole Welsh economy with the right injection of targeted public-sector support. Wales was unique in recognising the economic potential of the creative industries early on, and, to that

<sup>7</sup> Oliver & Ohlbaum (2020), UK Television Production Survey: Financial Census 2020 – Nations & Regions Annex, prepared for Pact, p. 6.

end, located the creative industries portfolio under its Ministry for the Economy, rather than Culture.

Initial support from the Welsh Government included investment of £9 million over five years in Bad Wolf in exchange for planned Welsh spending of £108 million on productions. Of this £9 million in total funding, £4.5 million was in the form of a repayable advance (paid up-front in instalments), and the other £4.5 million was in the form of a grant paid on achievement of milestones for Welsh spending. As of 31 December 2020, Bad Wolf had already achieved £121.8 million in Welsh spend – thereby exceeding the initial amount required by its agreement with the Welsh Government.

It also soon became clear that Wales did not have a studio suitable for the size and quantity of productions that Bad Wolf were making. The solution was for Bad Wolf to build studio space at the old Nippon Glass factory just off Ocean Way in Cardiff.

Facilities include 125,000 square feet of stage space, six stages, edit suites, backlots, flexible office space, costume and props storage. The studio development was arranged on commercial terms, with the Welsh Government purchasing and leasing back the Wolf Studios Wales facilities. In light of this, the Welsh Government's agreement with Bad Wolf was amended so that the overall Welsh spend target was increased from £108 million to £133 million. As noted above, as of 31 December 2020, Bad Wolf's Welsh spend stood at £121.8 million – just 9.1% under the agreed target.

**It is not unusual for film and HETV to receive support and grants from government, but the agreement between Bad Wolf and the Welsh Government is unique in its ambition and scale. It was tailored to achieve the strategy of delivering a sustainable screen sector in Wales that created year-round employment.**

Elsewhere, studios have been built that attract individual productions only and so create only short-term employment. The aim with Bad Wolf was to create a prolific high-end drama company that was based in Wales. By ensuring that Bad Wolf spent as much as possible of its production budgets in Wales over several years, it would be possible to create a screen industry in Wales, with real sustainability, long-term jobs, talent development and the nurturing of technical and support services needed to ensure the benefits lasted for years to come. In short, the Welsh Government envisioned Bad Wolf as an anchor for a creative cluster that could take root and grow.

The agreement between the Welsh Government and Bad Wolf was a big risk for both sides.

- For Bad Wolf it was a risk to locate in Wales. It would mean that it would be one of very few major UK HETV production company without a headquarters in London. This anchored Bad Wolf in Wales but potentially limited its ability to pursue projects and funding elsewhere around the country.
- The risk for the Welsh Government was that it entered into an innovative agreement that included investment through both a repayable advance and a grant paid on achievement of Welsh spending.

**The decision to invest in Bad Wolf was part of a clear strategy by the Welsh Government to encourage and create the right environment for HETV to take hold in Wales at scale. It was an innovative, unusual and high-risk approach.**

#### 1.4 REMIT AND OUTLINE OF STUDY

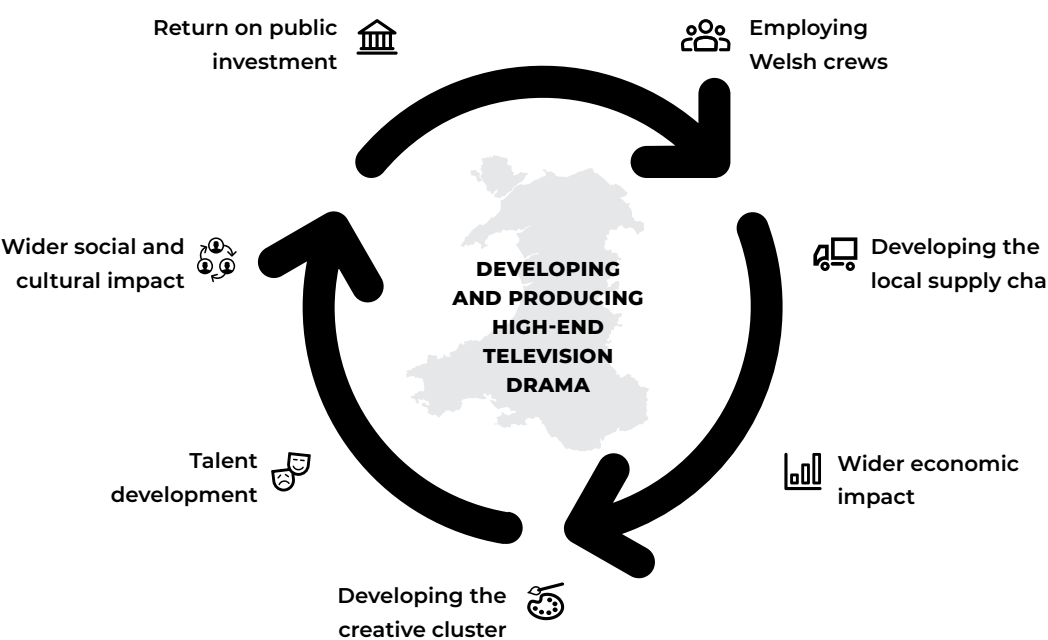
After five years based in South Wales, the time was right for Bad Wolf to assess the economic, social and cultural impact that it has had on Wales. To that end, Bad Wolf appointed Saffery Champness, working with Nordicity, to carry out an analysis of the economic impact of Bad Wolf Productions. This analysis examines the impact that Bad Wolf's production and operations in Wales have had on the local and national economies. In particular, this analysis examines Bad Wolf's impact in terms of its:

- Record of job creation within Wales
- Impact on specific local businesses (i.e. how Bad Wolf has worked with specific local businesses, the impact on these local businesses, jobs created, and new businesses attracted to Wales)
- Impact on local supply chains (i.e. the effect on other local businesses within the screen sector and the local economy more widely)
- Wider impact on the local economy

- Generation of additional gross value added (GVA) for the Welsh economy
- Impact on other organisations and charities (including theatre and arts groups)
- Impact in increasing diversity and tackling issues including social exclusion and poverty in Wales
- Impact on local workforce development (including the work of Screen Alliance Wales)
- Broader educational impact (including links with schools, further and higher education organisations and the classroom in the studio)
- Impact on the local creative industry (including how it has stimulated new business and creative opportunities)

These various channels of economic and social impact help to create a reinforcing cycle that has the potential to yield a positive public return on investment (for the Welsh Government) whilst creating the foundation for a self-sustaining screen production sector in Wales in the future (depicted in Figure 2).

**FIGURE 2: OVERVIEW OF BAD WOLF'S ECONOMIC AND FISCAL IMPACT**



1.5 APPROACH AND METHODOLOGY

The following report was prepared using a combination of primary research, desk research and economic impact modelling.

1.5.1 PRIMARY RESEARCH AND DESK RESEARCH

The primary research consisted of both stakeholder consultations and an industry survey. For the stakeholder consultations, Saffery Champness and Nordicity conducted interviews with 22 individuals and organisations from within Wales' screen sector in summer 2020. A full list of all of the interviewees can be found in Appendix A. The online survey was also distributed in summer 2020 to local businesses that supply goods and services to Bad Wolf, including tenants at Wolf Studios Wales. A total of 16 local businesses responded to the survey.

The primary research was complemented by desk research. In particular, the study team reviewed documents and data sets related to Bad Wolf's production activity and expenditures, and corporate operations. The study team also reviewed a variety of documents outlining the various social, cultural and philanthropic initiatives supported by Bad Wolf.

1.5.2 ECONOMIC IMPACT MODELLING

The data and information gathered through the desk research – and to a lesser extent the primary research – were used to prepare the economic impact modelling. Nordicity used its MyEIA™ Model to generate these estimates of economic impact. This model is based on the input-output tables and other economic statistics published by the Office for National Statistics (ONS), and provides estimates of the direct, indirect and induced economic impacts (see definitions in Box 1) in terms of full-time equivalents (FTEs) of employment, compensation of employment (COE) and GVA.

The bespoke nature of the MyEIA Model™ means that it can provide reliable estimates for any industry, even if that industry is not among the 64 industries that comprise ONS's 2016 input-output tables. With detailed data on expenditures within an industry or any type of economic shock, the MyEIA Model™ can generate estimates of direct, indirect and induced economic impacts.

Nordicity's MyEIA™ Model also provides a regional breakdown of the economic impact that results from a government intervention or an economic shock that occurs within a given Nation or region of the UK. Regional impacts within the MyEIA™ Model are assessed for the 12 NUTS1 regions within the UK, including Wales. This means that the MyEIA™ Model effectively permits one to assess how an economic shock that occurs in Wales would affect employment, COE and GVA within Wales and in each of the other 11 NUTS1 regions of the UK. For this particular analysis, however, the MyEIA™ Model was only used to assess the impact within Wales and the rest of the UK ("RoUK") in aggregate.

All monetary figures in this report are expressed in current prices and not adjusted for price inflation between 2015 and 2020.

BOX 1 TYPES OF ECONOMIC IMPACT

- Direct economic impact** refers to the employment, COE and GVA generated directly within the film and television production industry. It includes companies engaged in principal photography, visual effects (VFX) and post-production, and the cast, crew and other workers engaged in these activities.
- Indirect economic impact** refers to the increased employment, COE and GVA experienced by the businesses that supply goods and services to producers of films and television programmes (e.g. equipment hires, catering, legal and accounting services) as well as companies providing VFX and post-production services.
- Induced economic impact** refers to the increased employment, COE and GVA experienced within the Welsh and UK economies, when workers employed on account of the direct and indirect impacts proceed to spend their earnings within the Welsh or UK economies (e.g. purchases of groceries, home appliances, automobiles).

A more detailed description of the MyEIA™ Model can be found in Appendix D.



*‘There is a value in the type of employment created. High value drama needs lots of freelancers across all the skills’*

Ron Jones, Chair of Tinopolis and former Chair of the Welsh Government Creative Industries Sector Panel

*‘Bad Wolf brought both the studio facilities but also productions – which is what created sustainable jobs.’*

Tom Ware, University of South Wales

*‘The scale of production has created significant freelance opportunities and also work for suppliers.’*

Rhodri Talfan Davies, BBC Cymru Wales

One of the key areas through which Bad Wolf has had a positive impact on the local economy has been through the creation of hundreds of jobs within South Wales.

2.1 LOCAL CAST AND CREW

Across the seven television seasons (including three returning series) produced between 2018 and 2020, Bad Wolf created 826 FTEs of employment for 369 individual Welsh residents working on their production crews. Further employment was created in VFX and post-production and in Bad Wolf’s corporate operations.

In more detail, Bad Wolf’s expenditures on the principal photography of its television projects generated 1,872 FTEs of employment in Wales between 2018 and 2020. This total employment impact included:

- 826 FTEs directly within film and television production – i.e. employment as cast, crew and extras;
- 813 FTEs of indirect impact employment – i.e. employment at companies that supply goods and services to Bad Wolf’s projects (e.g. equipment hire, travel and accommodation, soundstage hire, legal and accounting services); and
- 233 FTEs of induced impact employment – i.e. employment generated on account of direct-impact and indirect-impact workers re-spending their wages on consumer purchases.

Local cast and crew on Bad Wolf productions form a significant proportion of the total crew. Welsh crew earned £29.3 million in employment income across the seven television seasons included in this analysis. This represented 53% of the overall UK cast and crew costs (£55.1 million) on those projects and 50% of global cast and crew costs (£58.2 million) on those productions.

2.2 LOCAL EMPLOYMENT IN VFX AND POST-PRODUCTION

In addition to the cast and crew employment created by Bad Wolf’s principal photography, the company’s spending on VFX and post-production in Wales generated a further 295 FTEs of local employment, including:

- 222 FTEs directly within VFX and post-production studios in Wales.
- 35 FTEs of indirect impact employment within industries that supply goods and services to these VFX and post-production companies based in Wales; and
- 38 FTEs across the Welsh economy on account of direct-impact and indirect-impact workers re-spending their wages on consumer purchases.

*‘Within a year of Bad Wolf arriving in Wales, people elsewhere in the industry were talking about Wales and the opportunities to work there.’*

Joel Collins, Painting Practice

Source:  
Saffery Champness / Nordicity estimates based on data from Bad Wolf, BFI and ONS

*‘Bad Wolf has helped to create a career ladder for talent in Wales.’*

Visit Wales Spokesperson

2.3 CORPORATE EMPLOYMENT IMPACTS

Lastly, Bad Wolf’s corporate operations, including the operation of Wolf Studios Wales, generated a further 76 FTEs of employment, including:

- 39 FTEs directly employed within Bad Wolf Ltd and Wolf Studios Wales;
- 25 FTEs of indirect impact employment within industries that supply goods and services to Bad Wolf’s corporate operations; and
- 12 FTEs of induced employment across the Welsh economy.

2.4 SUMMARY OF LOCAL EMPLOYMENT IMPACT

In total, across principal photography, VFX and post-post-production, and corporate operations, Bad Wolf generated 2,243 FTEs of local employment between 2015 and 2020. This total included:

- 1,087 FTEs of direct employment within the television production industry;
- 873 FTEs of indirect impact employment within industries that supply goods and services to the television production industry; and
- 283 FTEs of induced employment across the Welsh economy.

TABLE 1: FTES CREATED BY BAD WOLF PRODUCTIONS, WALES, 2015-2020

	Direct	Indirect	Induced	Total
Principal photography	826	813	233	1,872
VFX and post-production	222	35	38	295
Corporate	39	25	12	76
Total	1,087	873	283	2,243

2.5 INCREASING LOCAL EMPLOYMENT – HIGHLY SKILLED AND HIGH VALUE ROLES

The screen sector is important because the types of jobs created are relatively high-skilled, high-value roles and productions employ lots of freelancers and small and medium-sized enterprises (SMEs). This is unlike other local employers (e.g. call centres) that have a large number of relatively low-wage roles. Bad Wolf is important because it supports these more positive employment patterns.

**Bad Wolf has taken a holistic view with regards to developing local crew and the local industry and supporting the community. Although by developing the screen sector some crew will also work on projects being produced by other companies, Bad Wolf appreciates that it is more important to develop a broad local ecosystem rather than to protect its narrow commercial concerns.**

***‘Bad Wolf has been smart and systematic about traineeships and apprenticeships. Rather than complaining about skills shortages they have done something about it.’***

Rhodri Talfan Davies,  
BBC Cymru Wales

***‘There is a need to develop the next layer of skills to help build a robust industry.’***

John Fleming,  
Technicolor

There is an economic advantage to building a pyramid of people, which will be more efficient and cost-effective in the long-term. It is important to have a structure whereby crew can move up through the ranks – starting as trainees, then taking more junior roles before gaining experience and moving up and on. This creation of a crew pipeline will help Bad Wolf to remain competitive as the local screen sector develops.

There are still skills shortages in some areas, however, such as health and safety and post-production. To meet demand in these pinch points, Bad Wolf has had to continue to bring in people from outside of Wales. But for Bad Wolf the aim is to continue to increase local employment and develop local talent so that most roles in the future can be filled by local crew.

A high number of Welsh people are employed on Bad Wolf productions and Bad Wolf has made significant progress already in bringing on local creative crew. However, talent development takes time and the next few years will be crucial in embedding these roles in the industry.

Work on Bad Wolf productions has also fed into raising the bar for Welsh language productions. As local talent now have opportunities to work on international productions, they can bring back their expertise and skills to work on Welsh-language output. There is a great demand for Welsh speakers and this experience can help them to progress and build up the local industry.

# 3.0

***‘The local supply chain is growing, from catering to set building to transport. Together this generates the critical mass to sustain a television industry.’***

Huw Thomas, Leader  
of Cardiff Council

***‘Bad Wolf has successfully dealt with inward investment and growing local companies.’***

Berwyn Rowlands,  
Iris Prize

## LOCAL SUPPLY CHAIN IMPACT

A key part of Bad Wolf’s agreement with the Welsh Government was its commitment to growing the economy of Wales through partnerships with local businesses. This agreement anchored Bad Wolf to Wales by setting targets for local spend that would help to grow local suppliers and develop the local industry.

### 3.1 ANALYSIS OF LOCAL PRODUCTION SPENDING

The creation of this local supply chain is a key aspect of Bad Wolf’s ethos and has had a significant impact on the local economy. Production incentives in the form of tax reliefs were of course available in the past, but large-scale productions could not previously have been easily serviced because of the lack of an established local supply chain. What Bad Wolf has managed to do is to nurture an ecosystem of local suppliers that has started to make productions more locally self-sufficient. There are now the people and companies necessary to supply the necessary skills to service a production – from set design to construction to catering.

Through an analysis of Bad Wolf’s production budgets, corporate operations and studio operations, we have estimated the value of Bad Wolf’s local spending on supplies and services (Table 2). In total, between 2015 and 2020, Bad Wolf spent an estimated £134.9 million on the purchase of supplies and services for the production of its seven major television seasons – *A Discovery of Witches* (Seasons 1, 2 and 3), *His Dark Materials* (Seasons 1 and 2), *Industry* and *I Hate Suzie*.

Payments to Welsh suppliers accounted for £67.8 million or 50% of Bad Wolf’s total spending on supplies and services (£134.9 million) (Table 2). Spending on the procurement of materials for Bad Wolf’s productions accounted for the largest single category of local spending (£15.4 million).

VFX is a specialist area that requires large capital investment in equipment and highly specialised staff and, as one might expect, nearly 80% of Bad Wolf’s VFX work was conducted outside Wales. However, its television projects still spent over £11 million on VFX and post-production work within Wales.
















Other categories of significant local spending (i.e. budget categories where spending in Wales was both higher than elsewhere in the UK whilst also exceeding £1 million) included studios and build space (£13.3 million), hotel/living expenses (£6.9 million), rental of production equipment (£6.5 million), travel/transport (£6.4 million), rental of other production facilities and location fees (£3.9 million) and special effects (£1.9 million).

Source: Saffery  
Champness /  
Nordicity estimates  
based on data from  
Bad Wolf

\* The share of total  
spending in the  
production-budget  
category that was  
paid to suppliers  
based in Wales.

**Note:** Certain totals  
may not sum due to  
rounding.

**TABLE 2: BAD WOLF'S LOCAL SPENDING ON PRODUCTION SUPPLIES AND SERVICES,  
2015 - 2020 (£M)**

		Wales (£m)	RoUK	Outside UK	Total	Wales share*
	Materials - art department	15.4	4.9	0.1	20.4	75%
	Studios and build space	13.3	0.9	0	14.2	94%
	VFX and graphics	9.0	22.8	13.5	45.4	20%
	Hotel/Living	6.9	1.4	<0.1	8.3	82%
	Production equipment	6.5	2.6	<0.1	9.1	71%
	Travel/Transport	6.4	2.1	<0.1	8.6	74%
	Other production facilities & location fees	3.9	2.3	<0.1	6.2	64%
	Picture/Sound post- production	2.1	4.1	0.1	6.3	33%
	Special effects	1.9	<0.1	0.0	2.0	96%
	Insurance/Finance/Legal	1.1	4.2	0.3	5.6	20%
	Other production costs	0.8	2.2	1.4	4.4	18%
	Materials – wardrobe, make-up, hair	0.2	1.7	0.2	2.1	11%
	Contingency	0.1	0.4	0	0.6	24%
	Archive material	<0.1	<0.1	<0.1	0.1	74%
	Music	<0.1	1.5	<0.1	1.6	1%
	<b>Total</b>	<b>67.8</b>	<b>51.3</b>	<b>15.8</b>	<b>134.9</b>	<b>50%</b>

Bad Wolf's economic impact has been maximised because of the company's determination to work with local firms whenever possible. A wide range of suppliers have benefitted from the work that Bad Wolf has brought to the area – from travel companies to information technology, printing to bakeries, cabin hire to construction, security to graphic design.

Both local creative businesses and other local businesses have seen an impact. A local taxi company reported that its turnover had increased by £120,000 since Bad Wolf arrived in South Wales. It will be essential to continue to maintain and grow this local supply chain with enough local suppliers to create healthy competition.

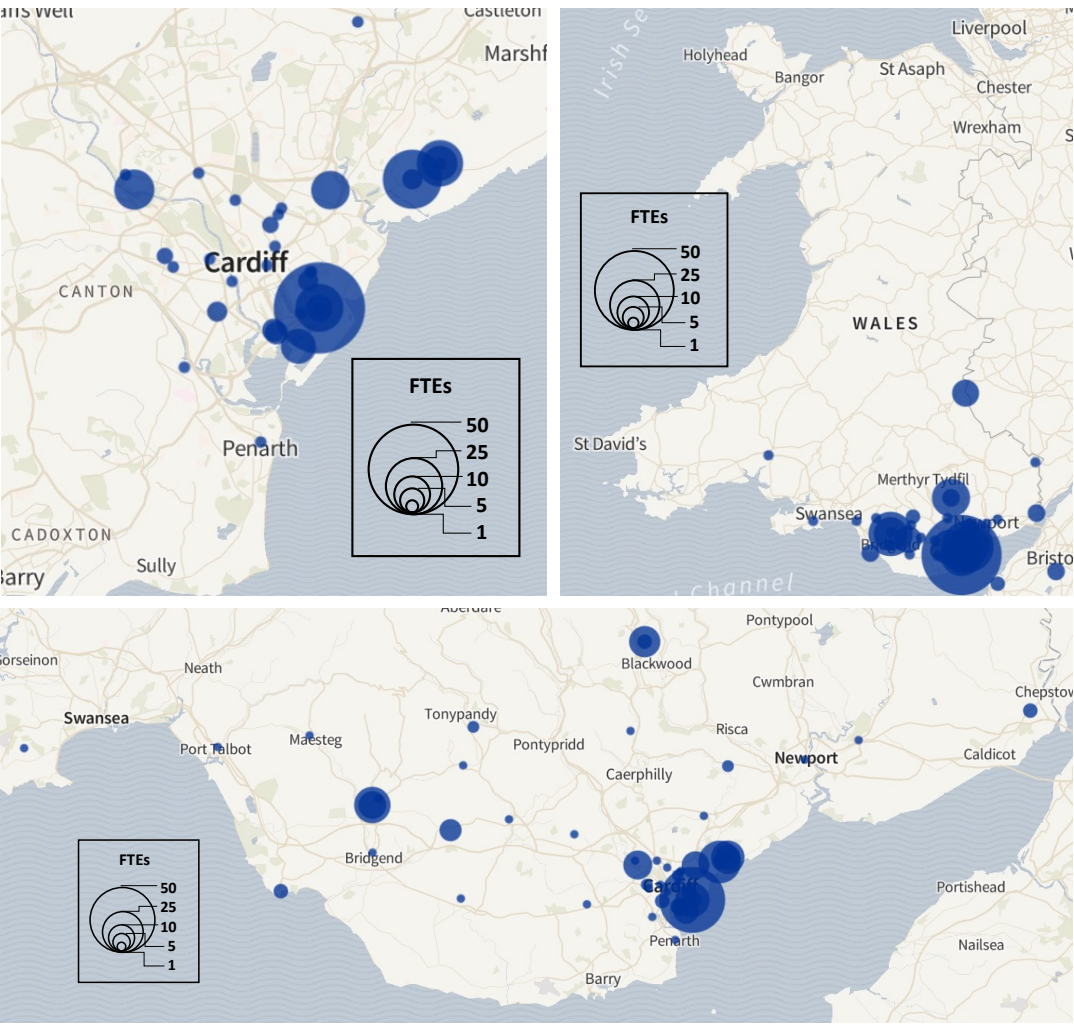
Local companies have reported that the scale of productions brought by Bad Wolf to South Wales have had a significant effect of their businesses. Indeed, over 80% of Bad Wolf's suppliers reported that their turnover had increased since 2015, at least partly because of Bad Wolf being located in the local area (Figure 3). This demonstrates the tangible impact that Bad Wolf has had on individual local businesses.

**GEO-MAPPING OF BAD WOLF'S LOCAL SUPPLIERS**

A geo-mapping of Bad Wolf's top suppliers shows that it maintains a very local supply chain. The maps below plot the top 20 individual suppliers on each of Bad Wolf's television projects (up to August 2020). Across Bad Wolf's television projects, there were 53 individual suppliers based in Wales. Most suppliers were located in Cardiff, however, Bad Wolf's supply chain within Wales extends as far as Carmarthen to the west, Monmouth to the east and Hay-on-Wye to north.

For many of these local suppliers, the new business from Bad Wolf directly supported the creation of 10 or more FTEs. For other suppliers, the job creation was less; however, Bad Wolf's ongoing slate of television production has offered the stability that permits investment in new positions and employees, by these companies.

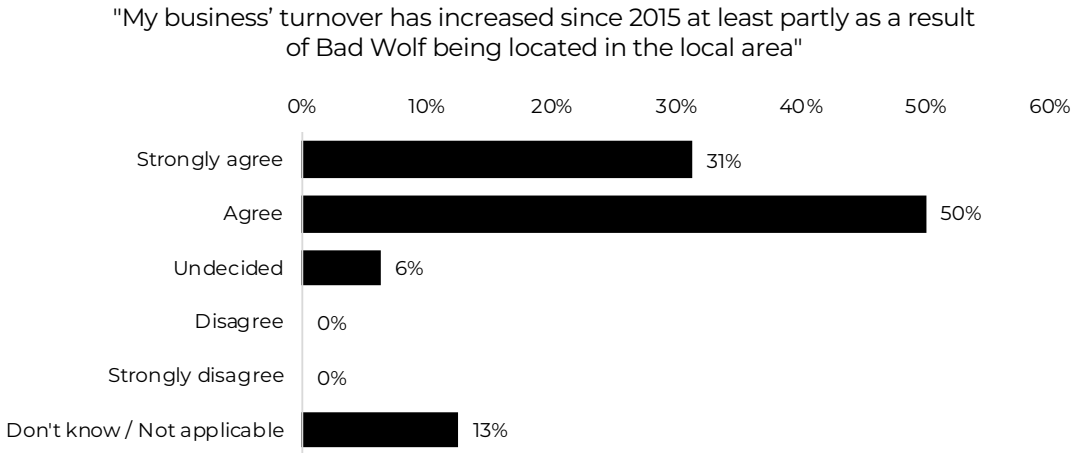
Source: Saffery  
Champness /  
Nordicity based on  
data from Bad Wolf  
and ONS





Source: Online survey of Bad Wolf suppliers (2020) n = 16

FIGURE 3: IMPACT OF BAD WOLF ON LOCAL SUPPLIERS' TURNOVER



*'The impact of Bad Wolf has already been massive and is the start of something bigger for the creative industries sector in Wales.'*

Dylan Jones Evans, University of South Wales

CASE STUDY – 4WOOD

4Wood TV and Film Ltd is a television and film set building company that was established in 2005 and produces high quality sets and scenery. Its founder, Scott Fisher, started out working for the BBC on *Doctor Who* and worked his way up to Construction Manager before working on productions like *Da Vinci's Demons*. 4Wood has grown consistently, and from strength to strength, over the five years since Bad Wolf was founded in Wales.

4Wood won the contract to construct Wolf Studios Wales in 2017. The six-month build involved converting an old steel fabrication shed, sub-dividing and sound proofing it into multiple sound stages. It subcontracted elements of the work to local firms and had approximately 50 tradespeople on site at any one time. Some of those companies and subcontractors now continue to work at the studio or have ongoing maintenance contracts.

4Wood has experienced rapid growth, going from working out of a shipping container on site, to having its own workshop and offices opposite Wolf Studios Wales. Scott began as a Construction Manager in 2005 with a small freelance crew. He now employs a team of around 20 employees, plus a team at times in excess of 150 creative freelancers

who work on individual projects as Bad Wolf brings new productions to Wales.

The company prides itself on employing highly skilled creative craftspeople who are dynamic and enthusiastic about their work. They range from scenic carpenters, artists, sculptors, moulders and plasterers, scenic metal fabricators, to administrative staff and accountants.

4Wood works alongside a core team of local freelancers and subcontractors with many different creative skills and they are regularly called upon, depending on the requirements of the production and the sets, from creating winding Mediterranean streets to contemporary and modern sets. Whatever the challenge, the diverse pool of talent allows them to create incredible sets. Bad Wolf provides approximately 60% of 4Wood's work and its high-end, dynamic shows, set in a wide variety of worlds, provide fantastic opportunities for varied and enjoyable work.

4Wood is committed to the ethos of training and developing crew. It provides work placements and training to students from the Royal Welsh College of Music and Drama, often resulting in working within the 4Wood team, as well as working closely with Screen Alliance Wales on providing experience for young people.

In 2018, 4Wood won the Cardiff Life Awards for the Creative Sector.

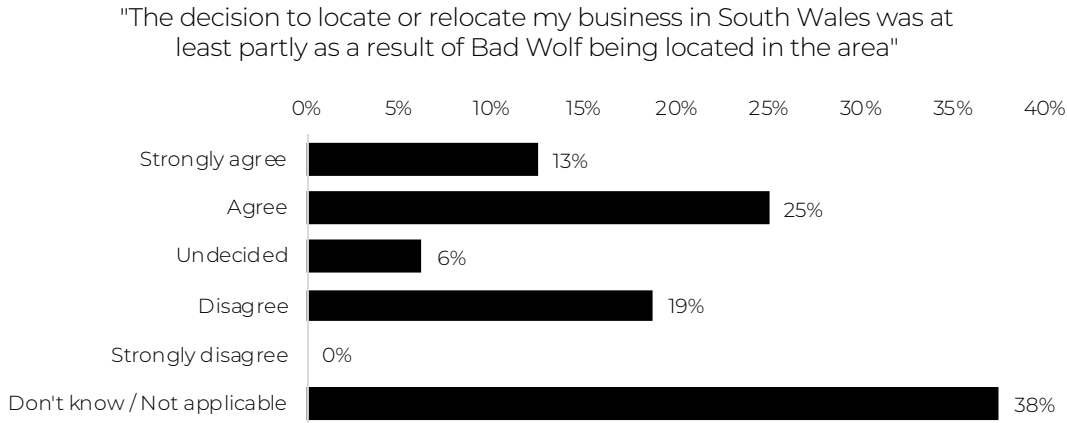
Source: Online survey of Bad Wolf suppliers (2020) n = 16

The scale of productions has created significant freelance opportunities and work for small businesses as suppliers, building the ecology of the Welsh screen sector. The economic template for high-end drama, involving a large budget over perhaps two or three series, spanning maybe five years, has created a secure environment for local suppliers. This security has allowed local businesses to invest and grow.

Consultees referred to Bad Wolf as a 'foundation stone' of the local creative economy. Others called Bad Wolf an 'anchor' business that needs to be protected and safeguarded until the ecosystem is more mature and developed. It was also described as a 'flagpole' that signals the presence of the industry. These metaphors demonstrate the crucial importance of the presence of a major production company in creating a basis on which other local businesses could build.

There are local businesses that have specifically been drawn to locate in South Wales because of the opportunities provided by Bad Wolf and the emerging screen industry cluster that has grown around it. Our online survey of local businesses showed that many businesses had been attracted by the new opportunities on offer. Approximately 38% of Bad Wolf suppliers agreed that the decision to locate or relocate their business in South Wales was at least partly as a result of Bad Wolf being located in the area (Figure 4).

FIGURE 4: IMPACT OF BAD WOLF ON LOCAL SUPPLIERS' TURNOVER



CASE STUDY – PAINTING PRACTICE

Painting Practice is an award-winning design studio that works across film and television, providing services including motion graphics, previsualisation, animation, VFX, production design, concept art, digital matte painting and prop design.

It was established in 2007 by Joel Collins and Dan May. The company is based in London but now has an office at Wolf Studios Wales. Joel and Dan started to work with Bad Wolf in 2017 and were impressed by its commitment to Wales and to building the Welsh screen industry.

They were heavily involved in the production of *His Dark Materials*, with Dan acting as VFX Art Director and Joel as Production Designer.

Their decision to locate in Wales was influenced by Bad Wolf and also because of access to students from the University of South Wales. Painting Practice has created a new virtual production tool, Plan V, to help design and visualisation. It was conceived during filming of *Black Mirror* and developed while Painting Practice worked on the enormous sets and complex action sequences of *His Dark Materials*. It allows the production team to explore 3D environments and previsualisation materials remotely, and means that many of Painting Practice's production staff could continue to work during the Covid-19 lockdown.

# 4.0

## TOTAL ECONOMIC IMPACT

*'Wales has too few industries of real international scale. Bad Wolf is one of them.'*

Rhodri Talfan Davies,  
BBC Cymru Wales

In the following section, we summarise the results of our analysis of the total impact that Bad Wolf had on the Welsh economy between 2015 and 2020, including the direct, indirect and induced impacts of Bad Wolf's production and other business activities. We examine the gross and additional impacts on the Welsh economy.

We also prepared an analysis of Bad Wolf's gross impact on the wider UK economy, through any television production undertaken outside of Wales or its incorporation of cast, crew or suppliers based outside of Wales.

### 4.1 GROSS ECONOMIC IMPACT ACROSS THE UK

When viewed on a UK-wide basis (including impacts within and outside Wales), Bad Wolf's production activities generated, on a gross basis, a total of 4,425 FTEs of employment and £283.4 million in GVA between 2015 and 2020 (Figure 5).

This total UK-wide impact included 2,029 FTEs and £136.7 million in GVA directly within the television production and post-production industries in the UK and a further 2,396 FTEs and £146.6 million in GVA within Bad Wolf's supply chain and across the wider UK economy (due to workers re-spending their wages on consumer purchases within the UK).

FIGURE 5: SUMMARY OF ECONOMIC IMPACT OF BAD WOLF ON UK ECONOMY, 2015-2020

Employment (FTEs)	Direct	Indirect	Induced	Total
	2,029	1,490	906	
GVA (£m)	Principal photography	VFX/Post	Corporate	Total
	3,503	826	96	
GVA (£m)	Direct	Indirect	Induced	Total
	136.7	91.3	55.4	
GVA (£m)	Principal photography	VFX/Post	Corporate	Total
	229.2	45.4	8.7	

Source:  
Saffery Champness /  
Nordicity estimates  
based on data from  
Bad Wolf, BFI and  
ONS

### 4.2 GROSS ECONOMIC IMPACT IN WALES

The economic impact associated with Bad Wolf's principal photography, spending on VFX and post-production, and corporate operations indicates that Bad Wolf generated a total of 2,243 FTEs of employment and £114.0 million in GVA for the Welsh economy between 2015 and 2020.

This total impact included 1,087 FTEs and £49.8 million in GVA directly within the television production and post-production industries in Wales; and a further 1,156 FTEs and £64.2 million in GVA within Bad Wolf's supply chain and across the wider Wales economy (through worker's re-spending their wages on consumer purchases within Wales).

FIGURE 6: SUMMARY OF ECONOMIC IMPACT OF BAD WOLF ON WALES ECONOMY, 2015-2020

Employment (FTEs)	Direct	Indirect	Induced	Total
	1,087	873	283	
GVA (£m)	Principal photography	VFX/Post	Corporate	Total
	1,872	295	76	
GVA (£m)	Direct	Indirect	Induced	Total
	49.8	48.5	15.7	
GVA (£m)	Principal photography	VFX/Post	Corporate	Total
	94.1	12.8	7.1	

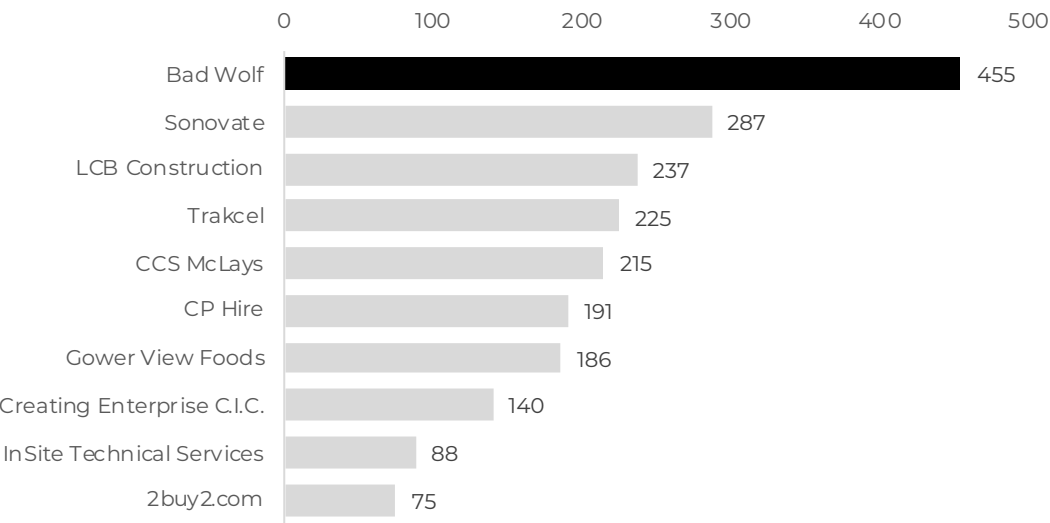
Source:  
Saffery Champness /  
Nordicity estimates  
based on data from  
Bad Wolf, BFI and  
ONS

### BAD WOLF: ONE OF WALES' FASTEST GROWING BUSINESSES AND BIGGEST CREATORS OF NEW JOBS

In recent years, Bad Wolf has been among the fastest growing companies in Wales. In 2019, it ranked first in Wales' Fast Growth 50, an annual project that celebrates the best of Welsh entrepreneurship – recognising the very high rate of growth it achieved between 2016 and 2018 (2,668% growth in turnover). Bad Wolf has continued to grow fast and ranked fifth in the 2020 edition of the Fast Growth 50.



**FIGURE 7: NUMBER OF DIRECT WELSH FTES\* GENERATED BY TOP 10 EMPLOYERS IN WALES FAST GROWTH 50 (2017-2019)**



**Source:**  
Saffery Champness / Nordicity estimates based on data from Wales Fast Growth 50 and Companies House.

\*Bad Wolf direct Welsh FTEs equal to FTEs generated in cast and crew roles between 2017 and 2019.

See elsewhere in this report for additional details. For other Fast Growth 50 companies, direct Welsh FTEs have been calculated as the sum of the number of persons employed by each company in 2017, 2018 and 2019 (as reported in Companies House financial accounts).

**4.3 ADDITIONAL ECONOMIC IMPACT FOR WALES**



The location of Bad Wolf’s headquarters in Wales, and the production of its various television series in Wales, were made possible by a multi-year public investment made by the Welsh Government. To assess the value for money delivered by this public investment we have estimated the additional economic impact generated by this intervention. We have therefore converted the estimates of the gross impact on the Welsh economy into estimates of the net impact on the Welsh economy, after considering the economic additionality of Bad Wolf’s production activities.

After taking into account the additionality of the economic activity stimulated in Wales by Bad Wolf Productions’ principal photography, spending on VFX and post-production, and corporate operations, we conclude that Bad Wolf generated an additional economic impact of 1,682 FTEs of employment and £85.5 million in GVA for the Welsh economy between 2015 and 2020 (Figure 8). This total additional impact included 815 FTEs and £37.4 million in GVA directly within the television production and post-production industries in Wales; and a further 867 FTEs and £48.2 million in GVA within Bad Wolf’s supply chain in Wales and across the wider Wales economy.

**Source:**  
Saffery Champness / Nordicity estimates based on data from Bad Wolf, BFI and ONS

**Note:** Certain totals may not sum due to rounding

**FIGURE 8: SUMMARY OF ADDITIONAL ECONOMIC IMPACT OF BAD WOLF ON WALES ECONOMY, 2015-2020**

 Employment (FTEs)	Direct 815	Indirect 655	Induced 212	Total 1,682 FTEs
	Principal photography 1,404	VFX/Post 221	Corporate 57	
 GVA (£m)	Direct 37.4	Indirect 36.4	Induced 11.8	Total £85.5 million
	Principal photography 70.6	VFX/Post 9.6	Corporate 5.3	

**4.4 RETURN ON INVESTMENT FOR WELSH GOVERNMENT**

As noted in Section 1.3, the Welsh Government has played a strategic role in creating a fiscal situation that would permit Bad Wolf to grow and be globally competitive from its base in Cardiff.

This strategic investment by the Welsh Government included a financial commitment of £9 million over five years in exchange for planned Welsh spending of £108 million on productions. This spending target was later raised to £134 million to account for the Welsh Government’s additional investment in Wolf Studios Wales.

The £9 million in total funding from the Welsh Government consisted of a £4.5 million repayable advance (paid up front in instalments) and a £4.5 million grant paid on achievement of milestones for Welsh spending. As of December 2020, Bad Wolf had already achieved £121.8 million of the Welsh production spend required by its agreement with the Welsh Government, or 91% of its target of £134 million. This £121.8 million included £29.3 million paid directly to Wales-based crew and cast, and £67.8 million paid to local suppliers of goods and services, including local providers of VFX and post-production services (£11.2 million). The balance of this local spend (£24.7 million) was accounted for by production fees and production overhead expenses at Bad Wolf.

Our analysis indicates that this £121.8 million in Welsh production spend generated an additional 1,682 FTEs of employment and £85.5 million in GVA for the Welsh economy between 2015 and 2020 (Figure 8).

**In other words, for each £1 million invested by the Welsh Government, the Welsh economy has benefitted from £9.5 million in additional GVA and 187 FTEs of additional employment.**

## TALENT DEVELOPMENT

Talent development and training was at the heart of Bad Wolf's strategy when locating in Wales. The scale and success of productions has provided new and secure opportunities to work in the screen industry. It has also meant there is a need to ensure the supply of both high-quality crew as well as above-the-line creative talent such as writers, actors and performers. The expansion of production activity has brought benefits and challenges to the local employment situation.

### 5.1 BUILDING A LOCAL TALENT POOL

The main challenge created by the scale of Bad Wolf's productions is that Wales has rapidly gone from hosting a few very large-scale productions to sometimes four or five simultaneous productions filming across studios in Wales. As a consequence, there has been a shortage of some skills in Wales. This makes it even more important to train and support new talent. Training is generally aimed at creating entry-level crew, while shortages remain at the higher level of skills. This is not a problem that is unique to Wales. Across the UK, there are skills shortages caused partly by changes in the market and the rapid rise of SVOD services such as Netflix and Amazon Prime Video, which are spending large amounts on drama production and drawing in talent.

**Bad Wolf has taken a systematic approach to growing the industry by developing capacity. It has addressed this by bringing productions and building a studio, which create experience for local crew and opportunities for employees at its headquarters.**

**Bad Wolf also created Screen Alliance Wales (SAW) to help fill skills gaps and fulfil its commitment to promoting careers in the industry and developing local talent from the ground up.**

An important part of the Bad Wolf way of working is the expectation that every production will support trainees. This is not always easy to achieve but is central to Bad Wolf's philosophy that if it builds the community within which it is now embedded, then it will grow too.

The aim is to create a sustainable talent pipeline that attracts local crew into the industry and supports their progression. However, it will take 5 to 10 years for these trainees to work their way up the career ladder and there is now a need to develop talent for mid-level jobs. Bad Wolf is determined to support and nurture crew to fill the range of roles, helping them to progress in their careers or facilitate career-changers from other sectors.

#### CASE STUDY - DAVID P DAVIS

"Bad Wolf are huge supporters of talent. They reward effort and just give everybody a chance."

David P Davis is an Executive Producer at Bad Wolf. David studied at the International Film School of Wales. He lives and is based in Wales but previously had to commute to London to secure regular freelance work. David worked as a freelance Script Executive on various productions, including *Doctor Who*, *Casualty*, *Holby City* and *Merlin*.

He joined Bad Wolf in 2018 as a Script Executive and worked on *Industry*, being promoted to Executive Producer, and is now a full-time member of the Bad Wolf team. The *Industry* team benefitted from the Bad Wolf ethos to recruit locally. The process was very open and created many opportunities for diverse new talent, from production trainees and runners to writers, designers and composers.

*'Screen Alliance Wales is a piece of accidental genius.'*

Ron Jones, Chair of Tinopolis and former Chair of the Welsh Government Creative Industries Sector Panel

*'Bad Wolf is a hugely important company for the University and for South Wales. It has had a huge impact on the students' experiences. The message is 'If you want to get into the screen industry then come to study in Cardiff'.*

Tom Ware, University of South Wales

### 5.2 SCREEN ALLIANCE WALES

SAW came into being in 2018 as an essential part of the Bad Wolf vision and started as both a philanthropic activity and a practical solution. It is based on the premise that everyone should be able to take advantage of the opportunities of having a large production company based in Cardiff. SAW was created and is core funded by Bad Wolf as a strategic body for the screen industry, creating a virtuous circle by ensuring the right training, talent and infrastructure.

#### ABOUT SCREEN ALLIANCE WALES

SAW is "the gateway between the industry and its workforce. It grows and promotes the talent, crew and services of the film and television industry in Wales. SAW is unique and will become the industry standard in promoting the complete supply chain from one single place. Screen Alliance Wales is a not-for-profit organisation that recognises the global potential of the film and television industry in Wales."<sup>8</sup>

SAW's success stems from its strong links to Bad Wolf and the real-life training opportunities available on Bad Wolf productions. SAW also works with local universities, training providers and a range of production and other companies, acting as a valuable intermediary between the needs of productions and supporting the needs of the local community.

The three main areas of SAW's work include:

- A **production directory** providing information about crews and locations;
- The provision of **work experience and traineeships** that promote talent development;
- The delivery of **broader educational work** that helps inspire young people.

<sup>8</sup> Screen Alliance Wales (2020), "Who we are".

**Bad Wolf's training model is bold because it brings a potential risk to productions, by taking on trainees with no track record. Most productions prefer to use experienced crew who they know, and Bad Wolf has had to win the hearts and minds of executives on each show by demonstrating that this is an ethos that is core to what Bad Wolf does.**

SAW's founding partners are Bad Wolf and the University of South Wales (USW). Other key supporters are HBO, S4C, Movietech, 4Wood TV and Film Construction, Panalux, Facilities by ADF, Mad Dog 2020 and Coleg y Cymoedd. These companies provide different kinds of support – from small financial contributions to offering masterclasses or work experience opportunities.

According to the online survey of local businesses, 37.5% reported that they had worked with SAW to offer education and training opportunities to local young people in Wales. SAW has also worked with other production companies and broadcasters, including S4C, BBC Wales, ITV Wales, production companies specialising on Welsh-language content productions, and projects filmed at Dragon Studios.

### 5.3 Training opportunities

Bad Wolf has created training opportunities to help new entrants into the industry in a number of ways:

- **Traineeships** help young people to learn about working in the film and television industry by being part of a real-world production. These on-the-job workplace experiences help to train and develop homegrown talent. For most, this will be their first step towards building a career in the creative industries. Traineeships are only for those looking for a first or second job in the industry and are aimed at Welsh residents. They are paid a basic wage.

- **Work Shadowing Placements** involve a two-week experience for young people (which is unpaid but includes lunch and expenses). Due to Covid-19, it was not possible to offer work shadowing placements but SAW is monitoring the situation and will endeavour to facilitate them again as soon as it can. It is also in the process of developing virtual opportunities, such as a monthly Careers Cafe and online Covid-19 Training.
- **Pathways** is a programme that SAW created through its Training Network and through which it works with partners in the screen sector to support individuals who aspire to work on film and television productions in Wales. It is active in working collaboratively with Welsh education facilities and training initiatives to support people looking to get into the industry.

These training programmes have had a significant impact on local people since they started in since 2018. The total figures to December 31, 2020 include:

- 217 work placements;
- 51 traineeships;
- 122 roles facilitated on productions in Wales.

During the Covid-19 pandemic, SAW has continued to use its social media channels to promote jobs and skills in the industry. For example, it has run its 'First Job' series online, highlighting the many different ways that people in the industry got their break.

#### 5.4 WORK WITH HIGHER EDUCATION

In order to bring new talent into the screen industries, Bad Wolf has been working in partnership with higher education (HE) to train and give experience to the next generation of cast and crew. Bad Wolf has a strong ongoing relationship with the University of South Wales (USW). In fact, USW's Cardiff Campus is only a mile from Wolf Studios Wales. The opportunities for students to get real world experience on-set has made it an attractive institution for students.

In turn, USW has been working to develop the ability and experience of new graduates so that they can meet the needs of HETV production. In 2017, USW pulled together its courses to create the Film and TV School Wales. It also launched an MA course in Film, which is supported by Bad Wolf. The Film and TV School Wales now offers eight undergraduate courses in film, with different pathways.

USW has a three-year funding agreement with SAW until 2022. This includes the provision of studio tours, access to masterclasses, access to an online talent portal and many other opportunities to work together.

A particular benefit has been work placements on key shows, such as *His Dark Materials* and *A Discovery of Witches*, and the connections these offer to gain real experience in the industry. This collaboration works on several levels to provide unique educational experiences. USW works with SAW both to create opportunities for students to get traineeships and then to move into full-time posts. SAW also supports the USW Student Film & TV Awards to recognise excellence and aspiration.

This relationship has an important impact on the overall student experience. In the National Student Survey over the past two years, students have commented that a highlight of their course has been the links to Bad Wolf – including the opportunities to meet set designers and other crew and attending studio tours.

However, the relationship is still at an early stage and will develop further over coming years. It will take time for these young people to graduate, gain experience and work up the system. The effect should be that, in five or ten years' time, Wales will see more local crew in more senior roles.

'Bad Wolf are a ray of optimism for our students. 15 years ago the college had one international student. With the growth of film and television in Cardiff, predominantly due to Bad Wolf, this has increased and also led to the expansion of the MA programme.'

Sean Crowley,  
Royal Welsh College  
of Music and Drama

Students at USW are often from lower socio-economic backgrounds (with 30% coming from the Welsh valleys, which is a category 1 area<sup>9</sup>). The work of SAW and USW therefore represents an aspirational investment, giving young people from the local area the inspiration and real possibility of working in the film industry.

USW also runs the relationship between SAW and five further education (FE) colleges (Bridgend, Merthyr, Cardiff & Vale, Coleg Gwent and Coleg y Cymoedd). These colleges offer Level 3 courses with access to the opportunities that SAW provides.

SAW also works with the Royal Welsh College of Music and Drama (RWCMD), which is a conservatoire in Cardiff that offers specialist practical and performance-based training in music and drama. Students from RWCMD train to enter the world of music, theatre, film and related professions. Students from areas such as costume and set design also have the opportunity to come and do work experience at Bad Wolf and take part in workshops and masterclasses.

#### 5.5 WORK WITH YOUNG PEOPLE

SAW's broader educational work has three stated aims:

- To raise awareness of the opportunities available for young people in the film and television industry;
- To inspire young people from school children, to college and university students looking for valuable experience to match their skills and knowledge, they provide the motivation;
- To provide professional expertise and experienced advice for young people who have the ambition to find a career in the creative industries.

SAW's educational work involves children from as young as seven or eight years old. The idea is that they see from an early age that a career in film or television is a possibility. Giving children real life experience of working in film and television, can raise their aspirations and opportunities for a range of jobs. There is nothing like seeing something that is actually happening locally and the tangible effect of seeing crews around and filming happening around the place to build people's awareness of the opportunities available and the benefits the screen industry brings.

Bad Wolf and SAW have put structures in place to scaffold opportunities for young people. This clear and well-structured local path for progression makes the possibility of a career in film and television an achievable aspiration.

Bad Wolf and SAW are keen that young people are aware of the full range of employment opportunities involved in the screen industry – from electricians to make-up artists. Their hands-on approach to school groups has been good at both telling this story and demonstrating the plethora of roles that are involved in the screen sector.

#### 5.6 CLASSROOM IN THE STUDIO AND EDUCATIONAL VISITS

**SAW has a unique resource in the form of a purpose-built classroom located inside Wolf Studios Wales. This enables it to offer educational tours and talks for young people to help them to learn about the Welsh film and television industry. There are generally between 9 and 18 young people in each session.**

It also offers tours of Wolf Studios Wales for educational institutions (for students from the age of nine) to allow young people to gain behind-the-scenes access. Young people can see the latest incredible sets for Bad Wolf's HETV productions and meet the people who help to create these on-screen worlds.

***'Bad Wolf and SAW have been a great way to give kids experience, aspiration and opportunities.'***

Ron Jones, Chair of Tinopolis and former Chair of the Welsh Government Creative Industries Sector Panel

***'There is a golden template – a primary school kid from a deprived area of Cardiff could study film or media studies at GCSE, then A level, then a degree or post-graduate qualification and work experience at Bad Wolf. There is a clear progression.'***

Tom Ware, University of South Wales

***'SAW's outreach work with disadvantaged communities is great and they do it very well.'***

Gerwyn Evans, Creative Wales

Young people can also participate in workshops which cover everything from set design to scriptwriting.

These creative workshops offer more interactive experiences and are aimed at inspiring people, including schoolchildren from the age of nine to adults alike, to create and realise their ideas within the context of the screen sector.

SAW frequently arranges visits to schools around Wales to talk to young people about pathways and potential careers within television and film. With insights into the world of television and film, it aims to make an impact and turn more young minds towards the creative industries. As part of its educational outreach works, SAW also aims to 'educate the educator' by demonstrating to teachers the possibilities for careers in the creative industries.

SAW attends school and college careers days and events to talk to young people who are interested in the creative arts. These are valuable opportunities to have face-to-face chats with people who may not usually get the chance to explore these options and are able to answer questions and provide advice. This is a great way for those interested in entering the creative industries to make contacts and get advice.

Since 2018, SAW has reached a large number of young people through its educational work. The total figures to the end of December 2020 include:

- 443 studio visits
- 9,827 young people reached through outreach work

Covid-19 has made this educational outreach work much more difficult. SAW has been working with The Cardiff Commitment, which is a partnership between the public and private sectors to work with schools and education providers to connect children and young people to work experience opportunities. In particular, SAW has partnered with The Cardiff Commitment to produce the 'Diff Diaries', a project for children and young people in Cardiff to share their experiences of Covid-19 through weekly diary entries.

***'Eight years ago the Creative Industries were weaker than people realised – there were good companies but there was barely a sector. Before Bad Wolf there were supply chain issues that meant large productions could not be supported. What Bad Wolf has done is to make the Welsh screen industry more self-sufficient in talent. Now there are people who can provide all of the necessary skills. From construction to catering to set design. There are companies who have prospered on the back of Bad Wolf.'***

Ron Jones, Chair of Tinopolis and former Chair of the Welsh Government Creative Industries Sector Panel

## 6.0

***'His Dark Materials is one of the biggest shows made in Britain. Working on it is like joining a family.'***

Joel Collins, Painting Practice

***"Technicolor Post Production is a big supporter of Bad Wolf."***

***"It takes a long time to build an industry and Bad Wolf sees the long-term picture and has that commitment."***

John Fleming, Technicolor

<sup>10</sup> [bbc.co.uk/news/uk-wales-54164729](https://www.bbc.co.uk/news/uk-wales-54164729)

## DEVELOPING THE CREATIVE CLUSTER IN SOUTH WALES

Bad Wolf has quickly become a key organisation in the ecology of the local creative economy.

The company's creative talent, industry knowledge, contacts, connections and prestige have meant that significant projects have now been commissioned and filmed in Wales. The scale of productions that Bad Wolf has brought has been a game-changer for growing the local screen industry.

The scale and type of work brought by Bad Wolf has enabled local creative companies to develop and this has had the effect of growing a founding small industry into a significant sector. Many more people can now imagine starting a career or establishing a business in the creative industries.

Moreover, Bad Wolf's explicit commitment to Wales has sent an important signal. By raising the visibility of Wales as a production centre, the confidence of local creative businesses has also increased. There is a new perception that Wales is a place where you can make big, high quality drama. This confidence, added to the fact that filming is less expensive in Wales than in London, has led to many new creative businesses springing up. The result has been a resurgence of film and television production in Wales.

### CASE STUDY – TECHNICOLOR

In 2019, as part of the expansion of its post-production capacity in UK, Technicolor launched a new facility at Wolf Studios Wales in Cardiff. It worked on *His Dark Materials*, providing picture and sound services.

At the time, Technicolor Post Production had 110 staff in London and was looking for opportunities to decentralise. The scale and profile of *His Dark Materials* was appealing and influenced its decision to locate in Wales.

Technicolor's Wales facility is currently still quite small, with two full-time staff, but they work closely with staff in London to provide a full range of services. Technicolor is keen to grow its Front End and Cloud services and VFX services.

Bad Wolf's focus on global quality content has meant that, within a year of its locating in Wales, people in the industry were already talking about Wales as an emerging screen cluster.

Wales quickly developed a reputation as an international film and television making destination with an international ethos, confidence and product. The first show – *His Dark Materials* – was a success in highlighting Wales because it was such a big robust show and had the scale to attract attention.

In September 2020, the BBC announced that a record £75 million had been invested in Wales-based productions during the 2019-20 financial year (to March 2020), representing 8.2% of network spend. This was largely due to *His Dark Materials*, the BBC's biggest ever per-episode drama budget.<sup>10</sup>

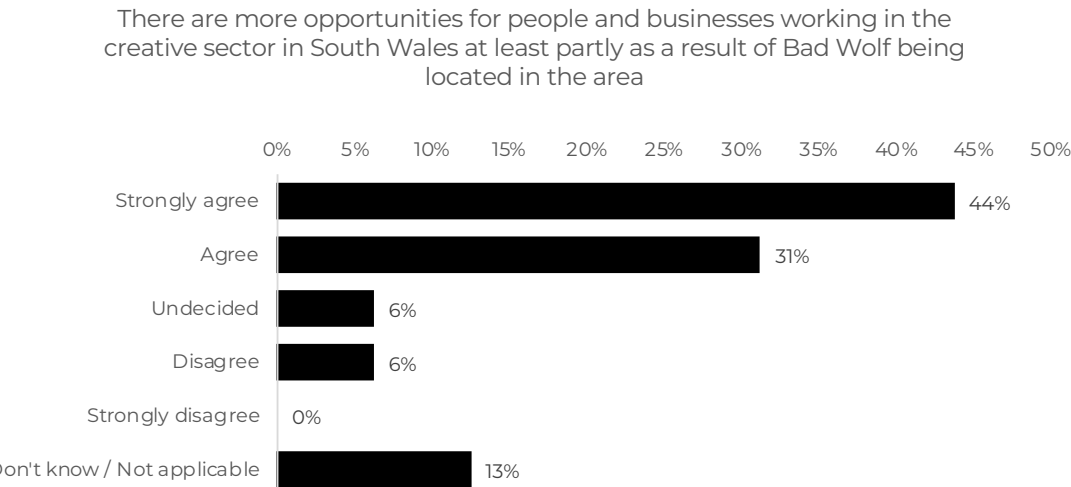


This sense of new opportunities has made Cardiff and South Wales an exciting place to be. Wales is an attractive place to live and work and, now that there are sustainable employment opportunities, experienced professionals are happy to come and work on productions and do not want to leave. Recognition of the growing importance of the creative industries has both retained talent and started to draw it in from other areas. This all helps to grow the sector at different levels.

Our online survey of local businesses highlighted the impact that Bad Wolf has had in growing the local creative economy. Around 75% of Bad Wolf’s local suppliers agreed that there are more opportunities for people and businesses working in the creative sector in South Wales at least partly as a result of Bad Wolf being located in the area (Figure 9).

Source: Online survey of Bad Wolf suppliers (2020)  
n = 16

**FIGURE 9: INCREASED OPPORTUNITIES FOR PEOPLE WORKING IN THE CREATIVE SECTOR IN SOUTH WALES**



**‘There is something really special and transformative about what Bad Wolf has done.’**

Huw Thomas,  
Leader of Cardiff Council

**CASE STUDY – JAMES NORTH**

James North grew up in Birmingham and studied at the Royal Welsh College of Music and Drama. He started his career with work experience in the Art Department of *Doctor Who* and then worked on *Doctor Who* for five years, where he met Jane and Julie. He has now worked for Bad Wolf for three years.

James made the jump into Production Design and has just designed seasons one and two of *A Discovery of Witches*, as well as being supervising Art Director for *His Dark Materials*. He received a nomination for Best Production Design for season one of *A Discovery of Witches* at the BAFTA Cymru Awards 2019.

James has seen the impact of Bad Wolf on the film and television industry in Wales and has benefitted from the opportunities that have opened up.

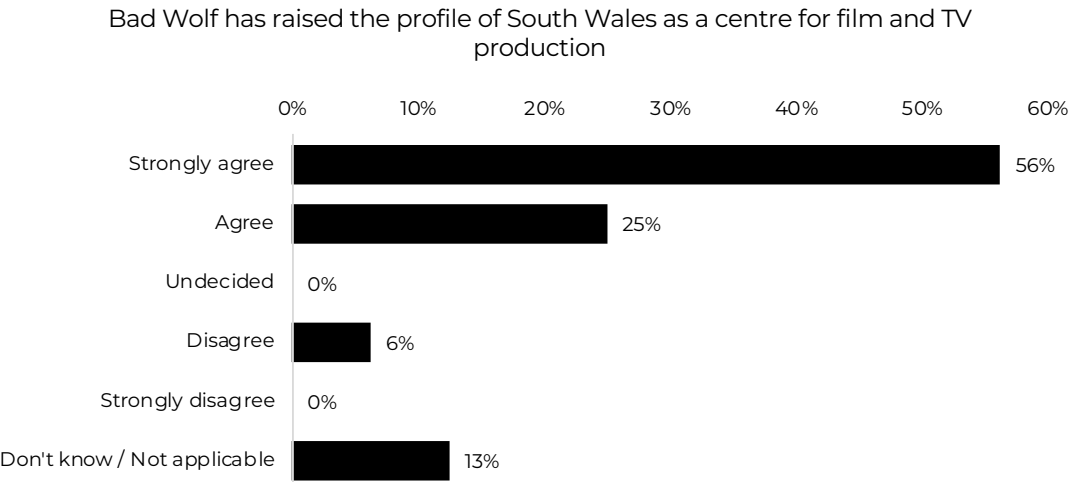
Bad Wolf has good relationships with overseas investors and this has had a ‘halo effect’ on the rest of the industry. Wolf Studios Wales have been very successful with back-to-back filming, leading Bad Wolf to use other studio space on occasion. Indeed, Bad Wolf invested in upgrading Seren Stiwdios (the former Pinewood Studios) for its filming of *A Discovery of Witches*. This increased profile has also brought benefits to Seren and Dragon Studios by helping to flag up South Wales as a production centre.

**The impact of Bad Wolf in promoting the local area is widely agreed upon. In our online survey of Bad Wolf’s suppliers, over 80% agreed that Bad Wolf had raised the profile of South Wales as a centre for film and television production (Figure 10).**

Many small creative companies and freelancers have started out or grown on the back of Bad Wolf. The next steps will be to support that layer of talent and help them to grow into bigger companies in a robust industry. For example, *A Discovery of Witches* is now on its third season and, although some London-based companies are already embedded in the production, Bad Wolf has successfully introduced more local providers into the supply chain.

Source: Online survey of Bad Wolf suppliers (2020)  
n = 16

**FIGURE 10: RAISING THE PROFILE OF SOUTH WALES AS A CENTRE FOR FILM AND TELEVISION PRODUCTION**





## CASE STUDY – GORILLA

Gorilla is Wales's largest post-production company. Established in 1999, Gorilla occupies five floors at its headquarters in Cardiff Bay with annex facilities in the city. Gorilla is a full service, end-to-end post-production facility delivering hundreds of hours of content to UK and international broadcasters, with a state-of-the-art facility, consisting of over 100 Avid edit suites, UHD/HDR colour grading, audio suites, VFX and a 24/7 technical team with Netflix and BBC Worldwide accreditation. It started as a small company 30 years ago and has now grown to about 60 staff.

Even before Bad Wolf established itself in Cardiff, Gorilla was in touch with the company about the possibility of working together on post-production work.

Their partnership started off by Gorilla supplying editors and equipment on

*His Dark Materials* and then *A Discovery of Witches*, growing rapidly but organically and partnering with London post-production houses as necessary. Gorilla then went through the rigorous HBO process to demonstrate that it could deliver post-production work to HBO's specifications and eventually worked on *Industry* end-to-end.

More recently, Gorilla has pioneered systems for remote editing, investing heavily in media storage facilities for VFX, which proved extremely useful during Covid-19. Gorilla is relying on ongoing shows from Bad Wolf to use its facilities and now has had the confidence to expand and invest in the expectation that Bad Wolf will be there for years to come. Gorilla is paying back this commitment by working with SAW to provide opportunities for post-production trainees.

7.0

*'Bad Wolf's decision to locate in Cardiff is a great vote of confidence in the city. Bad Wolf has helped the branding of Wales as a place to do business. It is very powerful to be able to point to high end productions that were all filmed in South Wales.'*

Huw Thomas, Leader of Cardiff Council

*'The Wales Marketing team would often feature Bad Wolf and its productions in campaigns and promotional materials. His Dark Materials was referenced in a recent campaign aimed at the creative sector in London, for example, as an example of outstanding productions 'made in Wales'.*

Visit Wales  
Spokesperson

## WIDER SOCIAL AND CULTURAL IMPACT

The way in which Bad Wolf is rooted in its Welsh location, the ethos of using local crew and suppliers and the fact that local people are now used to seeing filming happening in their local area means that the idea of a career in film is now a possibility for local people. Bad Wolf has its heart in Wales and is committed to promoting Wales at every opportunity.

### 7.1 INCREASING DIVERSITY, PROMOTING EQUALITY AND TACKLING SOCIAL EXCLUSION

Wales is committed to not only improving workplace diversity and inclusion but also economic opportunity. There are areas of severe deprivation and lack of opportunity and many people will never have considered a career in the screen sector. Bad Wolf has embraced the need to support the local community as part of growing the company's infrastructure. Bad Wolf's work with young people is a driver for creating opportunities and harnessing talent.

As noted in Section 2.1, local cast and crew represented 53% of the overall UK cast and crew costs and 50% of global cast and crew cost on Bad Wolf productions, with local spending on cast and crew generating the equivalent of 826 FTEs of employment for local workers.

By providing significant local employment opportunities, Bad Wolf provides a rich and exciting opportunity for different types of employment with the potential for social and cultural impact.

Equal opportunity is at the heart of the Bad Wolf ethos and it is an important principle that every job is advertised. Bad Wolf seeks to nurture new and emerging talent rather than just using the same names over and over again. These open and fair recruitment campaigns seek to redress the balance and some consultees commented that it is rare to find such a diverse company in the screen sector.

There is an emphasis on increasing diversity and promoting gender equality and the number of women in senior and management roles is above the industry average. As well as using the wealth of Welsh talent and resources, this approach is helping to bring a rich diversity of voices into the industry.

## CASE STUDY – IRIS PRIZE

The Iris Prize celebrates LGBT+ film and runs an international queer film festival in Cardiff and annually present the world's largest LGBT+ short film prize at £30,000.

Bad Wolf has been a supporter of Iris and sponsors the Best Feature Award category at the Iris Prize LGBT+ Film Festival. Iris also runs LGBT+ education and outreach projects and has a formal relationship focused on diversity with SAW.

As well as taking young people to visit Bad Wolf and use the facilities, Iris produces specialist LGBT+ sessions across the UK. It also produces up to 20 hours of original moving image content and offers young people an opportunity to get involved in film production and have the opportunity to appear on the SAW database.

*'It is a fantastic platform for the city to have such work produced in Cardiff'*

Huw Thomas, Leader of Cardiff Council

*'Local people are now used to filming and what it brings. It has raised the bar in terms of expectations and opportunities.'*

Roger Burnell, It's My Shout

*'If you come from a deprived local area then even to aspire to work in the film industry is amazing. It is an aspirational investment.'*

Tom Ware, University of South Wales

## 7.2 WORK WITH OTHER ORGANISATIONS AND CHARITIES

Bad Wolf has been active in working with local organisations and charities.

Bad Wolf works closely with local theatre companies and training schemes such as It's My Shout and engages local actors where possible.

The charities Bad Wolf worked with up to the end of December 2020 were BAFTA Cymru, the Green Man Festival, Hijinx, Iris Prize, It's My Shout, Royal Welsh College of Music and Drama and The Other Room. In 2019 Bad Wolf also supported 11 local youth theatre companies across Wales. These partners helped widen access and increase aspirations of diverse groups, disseminate information about opportunities, signpost talent and promote the Bad Wolf ethos to the wider industry.

### CASE STUDY – ITS MY SHOUT

**'Bad Wolf has done a lot for It's My Shout and for Wales in general.'**

Roger Burnell, It's My Shout

It's My Shout is a training scheme for all ages that uses experienced mentors to give hands-on experience of working in film. It was established 18 years ago to give opportunities to people living in areas of social deprivation to enter the creative industries. Since it was established 18 years ago, It's My Shout has supported over 1,000 people who have gone into industry roles. Former It's My Shout trainees work at Bad Wolf in a variety of roles, from electrician to production manager.

It's My Shout has good links with Bad Wolf, with dozens of scheme alumni who now work on Bad Wolf productions. As well as offering training opportunities, Bad Wolf has provided £10,000 sponsorship to support It's My Shout. It's My Shout has also seen the impact of Bad Wolf's activities in raising expectations and opportunities for local people.

## 7.3 REPRESENTING WALES ON THE SCREEN

Bad Wolf has been a platform for Cardiff and South Wales and the surrounding publicity has been part of the branding of the city as a great place to live, work and do business.

Wales as a filming location has a wealth of natural resources – from castles, mountains and seaside to sports stadia and cityscapes. Visit Wales and Business Wales take an umbrella approach to promoting Wales, as a place to visit but also for inward investment, work and study.

'Creative' is one of their key brand messages and these organisations are positioning Wales as a creative and contemporary destination. There is a good story to tell on encouraging the creative industries and Bad Wolf has played an important part in marketing campaigns. Visit Wales has also been active on social media during filming and in preparing guest packages for talent. This has brought great benefit in terms of talent speaking positively about Wales.

Many of the first tranche of Bad Wolf productions are set in alternative worlds. By their nature, they are not specifically using Welsh scenery, but they are still proudly Welsh productions. There is still the potential to do more in the future in terms of tourism marketing. In fact, Bad Wolf and Visit Wales are working together to create more publicity on the back of productions where possible. Although many productions so far have been fantasy-based, there is still local filming that can be featured and is interesting to audiences.

In the future, these are not necessarily the only type of show that Bad Wolf wants to make. Currently Wales is used as a location for economic and practical reasons, but the company is committed to creating a Wales-based, Welsh story with the same ambitions as *His Dark Materials*. Bad Wolf continues to develop stories and look at new ideas for Welsh stories that are high-budget shows with an international audience to appeal to an international broadcaster.

# 8.0

## CONCLUSION: BAD WOLF – COMMITTED TO WALES

**Bad Wolf was established with clear aims and ambitions for its impact: to make successful high-end drama with global reach and to build a screen industry in Wales that would in turn play its part in making Wales a centre of screen excellence.**

***'Jane and Julie have brought their professionalism and experience back to South Wales'***

Dylan Jones Evans, University of South Wales

***'Bad Wolf's strength is its ambition in wanting to bring large productions to Wales.'***

Sean Crowley, Royal Welsh College of Music and Drama

These aims and ambitions have been realised within five years of Bad Wolf's inception, with the company clearly demonstrating that Wales has the breadth, depth and capability necessary to grow its creative industries and provide employment 52 weeks of the year for local crews.

**A key to Bad Wolf's commercial success and its subsequent ability to impact local jobs and industry, is the creative ambition and scale of its productions. Due to Bad Wolf's proven achievements in big-budget, high-quality television drama, it is now recognised that it is possible to shoot a major scripted production in Wales. The high-end drama produced, using a Welsh workforce and Welsh suppliers, means that people in the industry respect Wales as a production centre in a different way.**

Jane Tranter and Julie Gardner established Bad Wolf with a mission to bring the world to South Wales and South Wales to the world. It was the result of over 15 years of creative collaboration between Jane and Julie and the production and creative community of Wales.

Bad Wolf has a mission and a belief in Wales, its production industry and its creative community. Before the establishment of Bad Wolf, the screen sector in Wales lacked a creative and economic anchor and was not optimising its potential. Any filming that did take place in Wales had to rely on bringing in people from elsewhere. By working in partnership with the Welsh production community and with support from the Welsh Government, Bad Wolf has created an impressive amount in five years.

However, partnership with the existing production community was not sufficient to achieve the company's ambitions. Bad Wolf also identified that, if it were to realise its ambitions of building a production company that had global reach, it needed to grow the production capacity of Wales. So, as well as a portfolio of high-quality drama, Bad Wolf has established Wolf Studios Wales, a world class production facility in Cardiff, and SAW, an innovative education and training scheme.

Strong leadership from Jane Tranter and Julie Gardner has created a successful company that is rooted in its Welsh location. They had a vision of Bad Wolf as a creative and economic foundation on which other businesses could build.

They took risks and invested in local production until the ecosystem was more mature and developed. This ambition was bold and has brought great rewards to the local economy.

Bad Wolf was able to grow incredibly fast because its founders already had an international reputation in making high quality television drama. They had the skills and experience to produce programmes with worldwide appeal and could therefore hit the ground running. Indeed, *His Dark Materials* is one of the biggest shows ever made in the UK.

The scale of the productions undertaken has been important in building capacity in the local creative economy. When *His Dark Materials* started filming, nothing of that scale had been produced before in Wales.

***‘Bad Wolf has a strong message and the more I am involved with them the more impressive their operations and contributions to the local industry become.’***

John Fleming,  
Technicolor

This was a great catalyst and has had a discernible effect on the local area. A cluster of key companies has started to develop, and their success has encouraged others to come to Wales or grow their business in Wales.

Bad Wolf has been hugely successful at being recommissioned with both *His Dark Materials* and *A Discovery of Witches* already on their third seasons. This has been due to the quality of its team and the slate that they are producing. It means that Bad Wolf productions stay active for many years, across multiple series, creating a secure environment for other businesses to flourish. These longer-term shows have allowed Bad Wolf to build longer-term structures and to invest in local talent. This has created security through consistency of opportunities and possibilities for growth.

Bad Wolf is clearly seen as a Welsh company and concept and Jane and Julie take every opportunity to promote the benefits of being located in Wales. The key to this was to have a clear vision and put it into practice. They are strong advocates for the area and the sector and are widely seen as champions of the creative industries in Wales.

It was their belief in Wales that, when thinking of a home for their new production company, motivated them to start their business in Wales. It was crucial that, unlike most independent production companies, the headquarters for Bad Wolf was in Wales, not in London.

By raising the visibility of Wales, the confidence of the local screen sector has also been increased. There is a new perception that it is possible to make big, high quality drama in Wales. This confidence has led to new creative businesses springing up on the back of Bad Wolf. The result has been a resurgence of film and television production in Wales.

A central part of the Bad Wolf philosophy has been to ensure that spending stays in Wales. This has meant working closely with local suppliers and developing local talent to meet the needs of productions.

International productions are increasingly mobile and Wales therefore needs to be competitive and attractive as a filming location. Filmmakers need to be assured of access to the crews and services they need. Bad Wolf, by spending locally, developing the local supply chain and growing talent, has helped to develop a local industry that provides this assurance. In addition to its spending on local crews, Bad Wolf spent a further £67.8 million on supplies and services from Welsh suppliers (50% of its total supplier spend) (see Section 3.1). Local suppliers confirmed the positive effect on their businesses, with 81% reporting higher turnover as a result of Bad Wolf’s location in South Wales (see Section 3.2).

Experience has proved the Welsh Government’s belief in Bad Wolf to have been correct. Bad Wolf has employed and developed local talent, enabled local creative companies to develop and provided new opportunities for other companies in the area. The effect of this has been to grow a foundling small industry into a significant sector. Many more people can now imagine a career in the creative industries in Wales.

**BAD WOLF IS A WELSH SUCCESS STORY**

Our research and analysis demonstrate that Bad Wolf has generated significant positive economic and social impacts for Wales between 2015 and 2020 whilst also delivering considerable value-for-money for Wales when compared to the £9 million of financial supported provided to it by the Welsh Government.

Through its production of HETV drama, Bad Wolf spent a total of £259 million between 2015 and 2020. Out of this total production spending, cast, crew, suppliers and IP holders based in Wales accounted for £121.8 million or 47% of total expenditures. Indeed, 92% of Bad Wolf’s total expenditures occurred in the UK.

***‘Bad Wolf produces content that has a global audience and reach, and this has helped to put Wales on the map.’***

Dylan Jones Evans,  
University of South  
Wales

Indeed, one of the key areas through which Bad Wolf has had a positive local economic impact has been through the hundreds of production-sector jobs it has created within South Wales. Across its seven television seasons, Bad Wolf created 826 FTEs of employment for 369 Welsh residents working on their production crews.

In addition to its spending on local crews, Bad Wolf spent a further £67.8 million on the purchase of supplies and services (including VFX and post-production services) from Wales-based businesses.

These purchases not only generated significant indirect and induced economic impacts across the Welsh economy but contributed to the sustainability and growth of many local SMEs whilst also attracting global production services companies such as Technicolor to open offices in Wales.

After taking into account all of the direct, indirect and induced economic impacts of Bad Wolf’s activities as well as the additionality of those impacts, we conclude that Bad Wolf generated an additional economic impact of 1,682 FTEs of employment, £56.9 million in COE and £85.5 million in GVA for the Welsh economy between 2015 and 2020. This total additional impact included:

- 815 FTEs, £31.9 million in COE and £37.4 million in GVA directly within the television production and post-production industries in Wales.
- 655 FTEs, £18.6 million in COE and £36.4 million in GVA within businesses based in Wales that supply goods and services to the television production and post-production industries in Wales; and,
- 212 FTEs, £6.4 million in COE and £11.8 million in GVA across the Welsh economy on account of direct-impact and indirect-impact workers re-spending their wages on consumer purchases within Wales

**The additional employment and economic activity generated by Bad Wolf has yielded £9.5 million in GVA and 187 FTEs of employment for every £1 million of in investment by the Welsh Government.**

This strong value-for-money performance, however, understates the value of Bad Wolf’s wider economic and social impact, which will likely provide the basis for even further long-term development of the screen cluster and creative industries within South Wales. Many of the wider impacts have been achieved through SAW – which was created and launched by Bad Wolf.

As of 31 December 2020, SAW had facilitated 217 work placements, 51 traineeships and 122 roles on productions in Wales. Its educational outreach programme had reached 9,827 young people across Wales and facilitated 2,443 studio visits for young Welsh people.

These initiatives have not only helped numerous Welsh people find immediate employment in production but will help many others find a path for career progression within television production, whilst also helping the industry attract an inflow of creative and talented Welsh crew in the coming decades.

This is critical because homegrown talent is most likely to stay local or return to Wales after gaining experience elsewhere.

SAW initiatives, along with Bad Wolf’s production activity, have also been critical in furthering diversity within Wales. There are areas of severe deprivation and lack of opportunity and there is a need to support communities who would never consider a career in television or film.

This economic deprivation is best tackled by fair access to education, training and employment opportunities in globally competitive export-oriented industries such as HETV production. Indeed, equal opportunity is at the heart of the Bad Wolf ethos and it is an important

principle that every job is advertised. By providing significant opportunities for different types of local employment, Bad Wolf provides a rich and exciting opportunity with the potential for social and cultural impact.

The challenges of Covid-19 have created delays and uncertainty. However, as Wales recovers from the effects of the pandemic, it will be even more important to maximise the benefits of Bad Wolf for the local creative economy. The next steps will be to consider the role of Bad Wolf over the coming years as it matures as an organisation. The sustainability of Bad Wolf will be key if is to continue and develop, taking risks and pursuing new ideas. It needs to continue developing and training people to enter the industry and to develop the talent and experience of those already in the industry.

Ultimately, after five years of creativity, risk-taking and investment, Bad Wolf has employed and developed local talent, enabled local creative companies to prosper and provided new opportunities for a wide

range of businesses in South Wales. The effect of this has been to grow a foundling small industry into an emerging screen cluster in South Wales, while contributing to the development of the area's reputation as an international filmmaking destination.

The future role of Bad Wolf will be key if the Welsh screen industry is to continue to develop and mature, taking risks and pursuing new ideas. There is a need to continuously build capacity in the local supply chain, to encourage and train people to enter the industry and as well as developing the talent and experience of those already in the industry.

## APPENDIX A: LIST OF CONSULTEES

ORGANISATION	INTERVIEWEE NAME(S)
4Wood	James Thorne
Bad Wolf Ltd	Raysham Sall
Bad Wolf Ltd	Bethan Evans
Bad Wolf Ltd	Antony Smith
BAFTA Cymru	Angharad Mair
BBC Cymru Wales	Rhodri Talfan Davies
Cardiff Council	Huw Thomas
Coleg y Cymoedd	Alistair Aston
Creative Wales	Gerwyn Evans, Joedi Langley, Jon Walters, Rachel Whitefield-Pierce
Deryn	Jo Kiernan
Gorilla	Rich Moss
Iris Prize	Berwyn Rowlands
It's My Shout	Roger Burnell
Painting Practice	Joel Collins
Production Designer	James North
Royal Welsh College of Music & Drama	Sean Crowley
Screen Alliance Wales	Allison Dowzell
Technicolor	John Fleming
Tinopolis	Ron Jones
University of South Wales	Dylan Jones Evans
University of South Wales	Tom Ware
Visit Wales	Mari Stevens

## APPENDIX B: ADDITIONALITY ASSUMPTIONS

In accordance with HMT Green Book guidance, we assessed the additionality of Bad Wolf's gross impact on the Welsh economy. That is, the net gain to the Welsh economy was determined after taking into account how much of the gross economic impact would have otherwise occurred in the absence of the Bad Wolf. Table A - 1 summarises the assumptions made with regards to various factors that affect the additionality of Bad Wolf's production activity and operations in Wales.

TABLE A: 1 ADDITIONALITY ASSUMPTIONS

Additionality factor	Description	Assessment and modelling assumptions
Deadweight	Refers to the employment and GVA that would have occurred in the absence of a government intervention.	In the absence of intervention by the Welsh Government, Bad Wolf's production and operations would have very likely been based elsewhere in the UK. <b>Deadweight = 0%</b>
Substitution	Refers to situations where a government intervention results in consumers or businesses substituting one activity for another. For example, a programme that subsidises businesses that hire new employees may actually replace existing employees with new ones in order to take advantage of the subsidy.	Not relevant since the intervention does not require Bad Wolf to alter its production and or corporate workforce in Wales in any manner. <b>Substitution = 0%</b>
Displacement	Refers to the degree to which any increase in outputs and outcomes generated by a government intervention reduces outputs and outcomes elsewhere in the geographic area. Displacement can take the form of either product-market displacement or factor-market displacement. Furthermore, the smaller the geographic domain of an intervention, the less likely that displacement will occur within that domain.	The employment generated by increased television production in Wales will draw workers from other sectors of the Welsh economy. However, given the relatively low rates of economic performance in South Wales and the relative high degree of unemployment and under-employment, we have assumed a low rate (25%) of factor market displacement, in accordance with published ready reckoner displacement rates. <sup>10</sup> <b>Displacement = 25%</b>
Leakage	Refers to the degree to which a government intervention generates benefits such as employment or income for individuals or businesses located outside the geographic, sectoral or other domain targeted by the intervention.	Implicitly taken into account in the economic impact modelling in two respects: 1. Estimates of economic impact have been based on a regional breakdown of production spending – Wales vs. RoUK vs. foreign. 2. Within the MyEIA Model, location quotients for Wales (published by ONS) have been used to estimate and deduct any indirect or induced impact spending (and related employment and GVA) that leaks from the Welsh economy.
Multiplier effects	Refers to the additional employment and GVA generated within a local, regional or national economy when income is re-spent within that local economy. Multiplier effects occur when direct beneficiaries of intervention spend within their supply chain, thereby generating higher income and employment at these upstream suppliers, and in turn, at their suppliers. Multiplier effects also occur when direct beneficiaries and workers within supply chain re-spend their additional income on consumer purchases within a local, regional or national economy. This type of multiplier effect is also referred to as an induced impact.	Implicitly taken into account in the estimates of indirect (i.e. supply chain) and induced impacts provided by the MyEIA Model.
Overall additionality rate	Net impact = gross impact x (1 – deadweight rate) x (1 – substitution rate) x (1 – displacement rate) x (1 – leakage rate) x Multiplier effects	Net impact = gross impact x (1 – 0%) x (1 – 0%) x (1 – 25%) x MyEIA Model results <b>= 75% x MyEIA Model results</b>

<sup>10</sup> English Partnerships (2008) Additionality Guide, Third Edition, p. 22.

## APPENDIX C: SUPPLEMENTARY ECONOMIC DATA

### TELEVISION PRODUCTION

TABLE A: 1 BAD WOLF SPENDING ON PRODUCTION SUPPLIES AND SERVICES, 2015 – 2020 (£)

Budget category	Wales	Rest of UK	Non-UK	Total
Materials - art department	15,355,013	4,936,970	99,325	20,391,308
Studios and build space	13,314,934	888,382	0	14,203,316
VFX and graphics	9,046,229	22,767,704	13,538,159	45,352,091
Hotel/Living	6,858,509	1,410,677	48,819	8,318,005
Production equipment	6,468,780	2,646,886	13,496	9,129,162
Travel/Transport	6,438,465	2,142,435	63,939	8,644,839
Other production facilities and location fees	3,941,246	2,250,934	13,000	6,205,179
Picture/Sound post-production	2,072,253	4,140,877	131,159	6,344,289
Special effects	1,923,752	87,822	0	2,011,574
Insurance/Finance/Legal	1,096,299	4,178,901	275,346	5,550,546
Other production costs	796,053	2,173,000	1,443,382	4,412,435
Materials – wardrobe, make-up, hair	235,329	1,668,845	185,460	2,089,635
Contingency	142,229	441,836	0	584,065
Archive material	84,998	30,353	119	115,470
Music	22,866	1,516,721	22,580	1,562,167
Total	67,796,954	51,282,344	15,834,783	134,914,081

Source: Saffery Champness / Nordicity estimates based on data from Bad Wolf

Note: Certain totals may not sum due to rounding

TABLE A: 2 BAD WOLF EXPENDITURES ON TELEVISION PRODUCTION, BY TYPE AND REGION, 2015-2020

	Wales	RoUK	Foreign	Total
Principal photography	110,581,584	86,827,602	8,203,762	205,612,947
VFX/Post	11,226,347	28,455,655	13,692,016	53,374,018
Total	121,807,931	115,283,257	21,895,778	258,986,965

Source: Saffery Champness / Nordicity estimates based on data from Bad Wolf

Note: Certain totals may not sum due to rounding

TABLE A: 3 PERCENTAGE DISTRIBUTION OF BAD WOLF EXPENDITURES ON TELEVISION PRODUCTION, BY TYPE AND REGION, 2015-2020

	Wales	RoUK	Foreign	Total
Principal photography	43%	34%	3%	79%
VFX/Post	4%	11%	5%	21%
Total	47%	45%	8%	100%

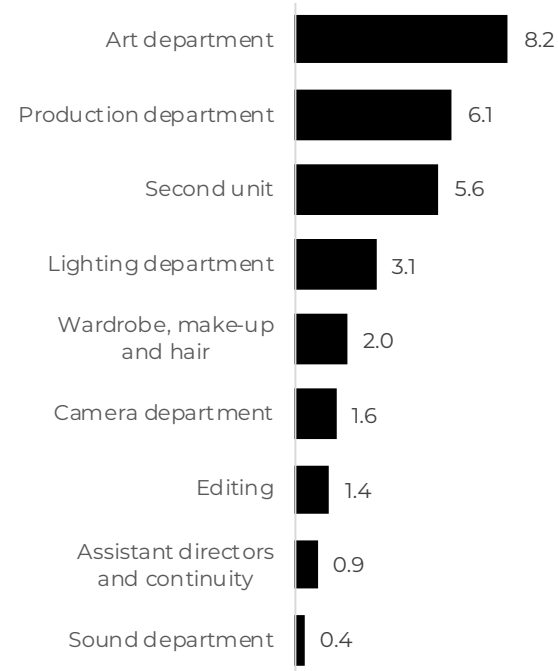
Source: Saffery Champness / Nordicity estimates based on data from Bad Wolf

Note: Certain totals may not sum due to rounding

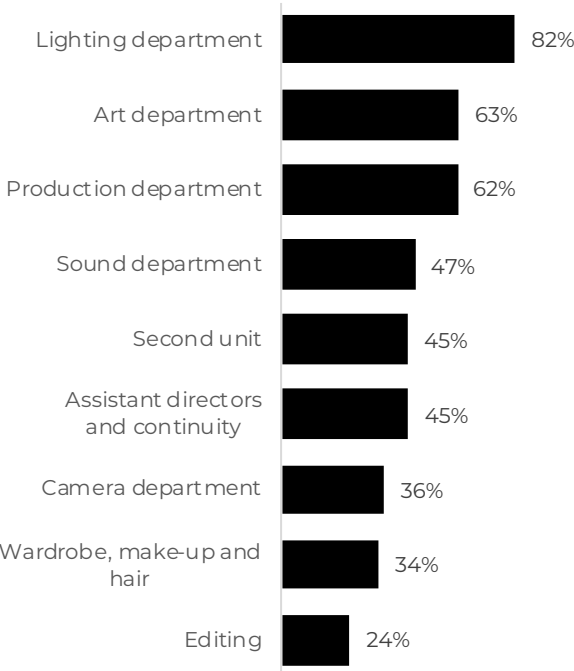


TABLE A: 4 WELSH CREW ON BAD WOLF TELEVISION PROJECTS

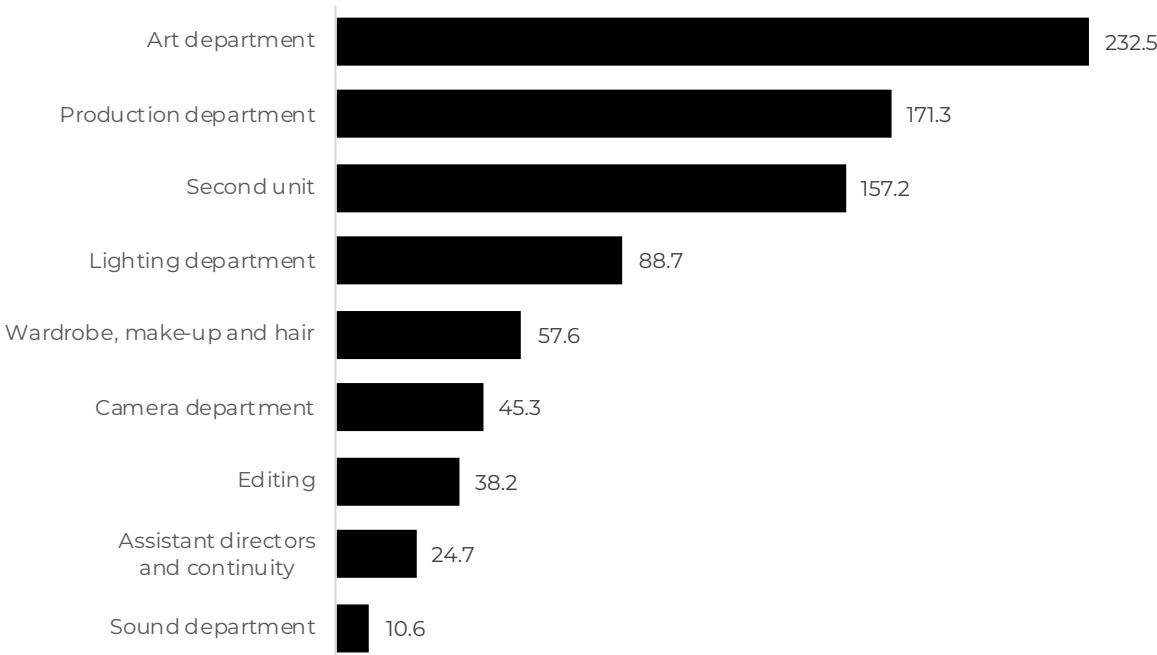
A. EMPLOYMENT EARNINGS (£M)



B. SHARE OF TOTAL CREW EXPENDITURES



C. FTEs\*



Source: Saffery Champness / Nordicity estimates based on data from Bad Wolf, BFI and ONS  
\* FTEs estimated on a pro-rata basis using a single mean FTE cost of £35,436 applicable across the television production industry

TABLE A: 5 ECONOMIC IMPACT OF BAD WOLF EXPENDITURES ON PRINCIPAL PHOTOGRAPHY, 2015-2020

		Direct	Indirect	Induced	Total
Wales	Employment (FTEs)	826	813	233	1,872
	COE (£)	29,274,700	23,198,557	7,226,038	59,699,296
	GVA (£)	35,335,631	45,552,443	13,206,208	94,094,283
RoUK	Employment (FTEs)	572	529	530	1,631
	COE (£)	25,782,755	19,069,626	18,734,781	63,587,163
	GVA (£)	63,150,810	37,742,834	34,239,428	135,133,072
Total UK	Employment (FTEs)	1,398	1,342	763	3,504
	COE (£)	55,057,456	42,268,184	25,960,819	123,286,459
	GVA (£)	98,486,442	83,295,277	47,445,636	229,227,355

Source: Saffery Champness / Nordicity estimates based on data from Bad Wolf, BFI and ONS  
Note: Certain totals may not sum due to rounding

TABLE A: 6 ECONOMIC IMPACT OF BAD WOLF EXPENDITURES ON POST-PRODUCTION AND VFX, 2015-2020

		Direct	Indirect	Induced	Total
Wales	Employment (FTEs)	222	35	38	295
	COE (£)	8,183,712	841,803	993,809	10,019,324
	GVA (£)	9,385,404	1,649,686	1,810,152	12,845,242
RoUK	Employment (FTEs)	371	77	84	532
	COE (£)	20,743,425	2,133,735	2,519,028	25,396,188
	GVA (£)	23,789,379	4,181,494	4,588,229	32,559,103
Total UK	Employment (FTEs)	593	112	121	826
	COE (£)	28,927,137	2,975,538	3,512,837	35,415,512
	GVA (£)	33,174,784	5,831,181	6,398,381	45,404,345

Source: Saffery Champness / Nordicity estimates based on data from Bad Wolf, BFI and ONS  
Note: Certain totals may not sum due to rounding

CORPORATE OPERATIONS AND WOLF STUDIOS WALES

In addition to its television production activity, Bad Wolf’s corporate operations – including its management and operation of Wolf Studios Wales – generate spending within the Wales economy. When analysing the financial impact of Bad Wolf’s corporate operations, we have excluded any turnover (and associated pro-rata share of operating expenses) that was earned from Bad Wolf’s television production projects, which have already been covered in the preceding sub-section.

For example, Bad Wolf’s corporate office earns part of its turnover from producer fees and production-overhead allocations paid out of budgets on Bad Wolf’s television projects. Wolf Studio Wales also earns the vast majority of its turnover from the stage-rental fees paid to it from the production budgets on its television production budgets. In both cases, these intra-company amounts have been removed from the calculation of the financial impact of the Bad Wolf’s corporate operations, since they have already been counted in the preceding section.

TABLE A: 7 BAD WOLF’S CORPORATE OPERATIONS EXPENDITURES, 2015-2020\*

	Amount
Staff costs	5,033,744
Supplies and services	2,484,681
<b>Total</b>	<b>7,518,426</b>

Source: Saffery Champness / Nordicity estimates based on data from Bad Wolf

\* Includes Bad Wolf’s corporate operations and the operations of Wolf Studios Wales. Operating expenditures have been estimated as a pro rata share of total expenditures at Bad Wolf Limited and Wolf Studios Wales, based on the share of revenue at these companies not earned from intra-company sources.

TABLE A: 8 ECONOMIC IMPACT OF BAD WOLF’S CORPORATE OPERATIONS AND WOLF STUDIOS WALES, 2015-2020

		Direct	Indirect	Induced	Total
Wales	Employment (FTEs)	39	25	12	76
	COE (£)	5,033,744	790,839	363,156	6,187,739
	GVA (£)	5,081,947	1,342,731	663,699	7,088,377
RoUK	Employment (FTEs)	0	10	10	20
	COE (£)	0	478,048	470,955	949,003
	GVA (£)	0	799,939	860,712	1,660,650
<b>Total UK</b>	<b>Employment (FTEs)</b>	<b>39</b>	<b>35</b>	<b>22</b>	<b>96</b>
	<b>COE (£)</b>	<b>5,033,744</b>	<b>1,268,886</b>	<b>834,111</b>	<b>7,136,742</b>
	<b>GVA (£)</b>	<b>5,081,947</b>	<b>2,142,669</b>	<b>1,524,410</b>	<b>8,749,027</b>

Source: Saffery Champness / Nordicity estimates based on data from Bad Wolf, BFI and ONS

Note: Certain totals may not sum due to rounding

TABLE A: 9 ECONOMIC IMPACT OF BAD WOLF EXPENDITURES ON PRINCIPAL PHOTOGRAPHY, 2015-2020

		Direct	Indirect	Induced	Total
Principal photography	Employment (FTEs)	826	813	233	1,872
	COE (£)	29,274,700	23,198,557	7,226,038	59,699,296
	GVA (£)	35,335,631	45,552,443	13,206,208	94,094,283
VFX/Post	Employment (FTEs)	222	35	38	295
	COE (£)	8,183,712	841,803	993,809	10,019,324
	GVA (£)	9,385,404	1,649,686	1,810,152	12,845,242
Corporate	Employment (FTEs)	39	25	12	76
	COE (£)	5,033,744	790,839	363,156	6,187,739
	GVA (£)	5,081,947	1,342,731	663,699	7,088,377
<b>Total</b>	<b>Employment (FTEs)</b>	<b>1,087</b>	<b>873</b>	<b>283</b>	<b>2,243</b>
	<b>COE (£)</b>	<b>42,492,156</b>	<b>24,831,199</b>	<b>8,583,003</b>	<b>75,906,359</b>
	<b>GVA (£)</b>	<b>49,802,983</b>	<b>48,544,861</b>	<b>15,680,058</b>	<b>114,027,902</b>

Source: Saffery Champness / Nordicity estimates based on data from Bad Wolf, BFI and ONS

Note: Certain totals may not sum due to rounding

TABLE A: 10 TOTAL GROSS ECONOMIC IMPACT OF BAD WOLF PRODUCTIONS, UK-WIDE, 2015-2020

		Direct	Indirect	Induced	Total
Principal photography	Employment (FTEs)	1,398	1,342	763	3,503
	COE (£)	55,057,456	42,268,184	25,960,819	123,286,459
	GVA (£)	98,486,442	83,295,277	47,445,636	229,227,355
VFX/Post	Employment (FTEs)	593	112	121	826
	COE (£)	28,927,137	2,975,538	3,512,837	35,415,512
	GVA (£)	33,174,784	5,831,181	6,398,381	45,404,345
Corporate	Employment (FTEs)	39	35	22	96
	COE (£)	5,033,744	1,268,886	834,111	7,136,742
	GVA (£)	5,081,947	2,142,669	1,524,410	8,749,027
<b>Total</b>	<b>Employment (FTEs)</b>	<b>2,029</b>	<b>1,490</b>	<b>906</b>	<b>4,425</b>
	<b>COE (£)</b>	<b>89,018,337</b>	<b>46,512,609</b>	<b>30,307,767</b>	<b>165,838,713</b>
	<b>GVA (£)</b>	<b>136,743,173</b>	<b>91,269,127</b>	<b>55,368,427</b>	<b>283,380,727</b>

Source: Saffery Champness / Nordicity estimates based on data from Bad Wolf, BFI and ONS

Note: Certain totals may not sum due to rounding

TABLE A: 11 ESTIMATED TAX REVENUE IMPACT (UK-WIDE) OF BAD WOLF PRODUCTIONS, 2015 TO 2020 (£)

	Tax revenue (£)
Income tax	49,346,220
Corporation tax	4,567,547
VAT on consumer spending	10,072,693
<b>Total</b>	<b>63,986,459</b>

Source: Saffery Champness / Nordicity estimates based on data from Bad Wolf, BFI and ONS

# APPENDIX D: MYEIA™ MODEL

## INDIRECT IMPACT

Indirect impacts were estimated using Nordicity's MyEIA™ Model. This model utilises the 2016 input-output tables published by ONS, along with other economic data (e.g. median wages) to estimate how increased purchases of goods and services translate into incremental employment, COE and GVA.

### Construction of input-purchases vector

Data collected through primary and secondary research was used to prepare a profile of input purchases. After removing expenditures on sources of value added (i.e. COE, mixed income), the remaining expenditures were mapped to a 64 x 1 vector ( $x$ ) of industries (corresponding with the industries listed in the 2016 input-output tables published by ONS).

### Estimation of indirect output

The 2016 Leontief inverse matrix ( $L$ ) for the UK economy was derived from the 2016 input-output tables published by ONS. The following formula was then used to estimate a 1 x 64 vector ( $y$ ) containing the changes in output,  $y_i$ , in each industry as a result of the input purchases arising from each sector.

$$y = x'L$$

Where:  
 $y$  is a 1 x 64 vector of changes in output ( $y_i$ )  
 $x$  is 64 x 1 vector of input-purchase expenditures (by receiving industry)  
 $L$  is the 64 x 64 Leontief inverse matrix

### Calculation of indirect GVA

The GVA ratio ( $a_i$ ) was calculated for each of the 64 industries listed in the ONS input-output tables and  $L$ . These ratios were calculated as:

$$a_i = GVA_i / z_i$$

Where:  
 $GVA_i$  is the value of GVA generated in industry  $i$  as per the 2016 input-output tables  
 $z_i$  is the total value of output in industry  $i$  as per the 2016 input-output tables

The total indirect GVA impact across all industries ( $g^*$ ) was calculated in the following manner:

$$g^* = a'y$$

Where:  
 $a$  is a 64 x 1 vector of  $a_i$   
 $y$  is a 64 x 1 vector of  $y_i$

### Calculation of indirect COE

The COE ratio ( $b_i$ ) was calculated for each of the 64 industries listed in the ONS input-output tables. These ratios were calculated as:

$$b_i = COE_i / z_i$$

Where:  
 $COE_i$  is the value of COE generated in industry  $i$  as per the 2016 input-output tables  
 $z_i$  is the total value of output in industry  $i$  as per the 2016 input-output tables

The total indirect COE impact across all industries ( $w^*$ ) was calculated in the following manner:

$$w^* = b'y$$

Where:  
 $b$  is a 64 x 1 vector of  $b_i$   
 $y$  is a 64 x 1 vector of  $y_i$

### Estimation of indirect employment

The number of indirect jobs (measured in FTEs) was estimated by dividing the COE impact in each industry ( $w_i$ ) by the average FTE cost in each industry ( $m_i$ ).

$$q_i = w_i / m_i$$

Where:  
 $w_i$  is the total wage impact in industry  $i$   
 $m_i$  is the average FTE cost in industry  $i$

Total indirect employment ( $q^*$ ) was arrived at by summing the employment impacts ( $q_i$ ) across the 64 industries.

$$q^* = \sum_i q_i$$

### Induced impact

Nordicity's MyEIA™ Model also provides estimates of induced impacts; however, these estimates are not based directly on ONS's input-output tables. Instead, they are based on existing observations of the average ratio of Type II and Type I multipliers in the UK economy.

### Estimation of induced output

The values of direct and indirect output were summed to arrive at an estimate of Type I output.

$$y_{TYPE\ I} = y_{DIRECT} + y_{INDIRECT}$$

The Type I output was then multiplied by a ratio of 1.25 to arrive at an estimate of Type II output. This ratio was obtained from research of the relationship between Type I and Type II ratios (see box below).

$$y_{TYPE\ II} = 1.25 \cdot (y_{TYPE\ I})$$

RELATIONSHIP BETWEEN TYPE II AND TYPE I RATIOS

In The Economic Impact of the UK Film Industry (September 2012), Oxford Economics reported that the induced impact multiplier was 1.25. In other words, the ratio of the Type II to Type I multipliers for the UK economy was 1.25.

This is corroborated by the Type I and Type II multipliers published the Scottish Government for the Scottish economy (see “Input-Output Tables 1998-2013 - Leontief Type 2 Table”). For the Scottish economy, the Type II employment multipliers are on average equal to 1.20 times the Type I multipliers. The slightly lower induced impact multiplier for Scotland is understandable, given the likelihood that some portion of household spending will leak from the Scottish economy into the economies of England, Wales or Northern Ireland.

Based on these observations, Nordicity’s MyEIA™ Model used an induced impact ratio of 1.25 and thereby assumed that induced impacts will add 25% in output to the sum of the estimates of direct and indirect output.

For impacts at the regional level, lower multipliers were used.

Estimation of induced GVA

The total value of induced impact GVA was estimated by multiplying the economy-wide GVA-to-output ratio (as per the 2016 input-output tables) by the estimate of Type II output.

$$g_{INDUCED} = (a^*) \cdot (y_{TYPE II})$$

Where:  
a\* is the GVA-to-output ratio across all industries (0.53)

Estimation of induced COE

The total value of induced impact COE was estimated by multiplying the economy-wide COE-to-output ratio (as per the 2016 input-output tables) by the estimate of Type II output.

$$w_{INDUCED} = (b^*) \cdot (y_{TYPE II})$$

Where:  
b\* is the COE-to-output ratio across all industries (0.29)

Estimation of induced employment

The number of induced impact FTEs (qINDUCED) was estimated by dividing the estimate of induced COE (wINDUCED) by the average FTE cost across the UK economy (m\*).

$$q_{INDUCED} = w_{INDUCED} / m^*$$

Where:  
m\* is the average FTE cost in the UK economy in 2019 (£34,026)

TOTAL ECONOMIC IMPACT

The total economic impact in terms of GVA, COE and employment was arrived at by summing the estimates of the direct, indirect and induced impacts.

REGIONAL AND LOCAL ECONOMIC IMPACTS

The MyEIA™ Model can also be used to generate estimates of direct, indirect and induced impacts in terms of employment, COE and GVA for NUTS1, NUTS2 and local authorities within England, Scotland and Wales. This regionalisation of the model is based on location quotients (LQs) published by ONS.

The LQs are used to derive regional-supply ratios (λ) for a given geographic jurisdiction. Where λ>1, it is set equal to 1.

These regional-supply ratios are used to adjust the input purchase expenditures vector (x) to approximate the portion of input purchases met by suppliers located within a given geographic jurisdiction.

$$X_{REGIONAL} = x_i \cdot \lambda_i$$

Where  
x<sub>i</sub> input-purchase expenditures (by receiving industry i)  
λ<sub>i</sub> is the supply ratio for industry i..

The regional-supply ratios are also used to create a regionalised Leontief inverse matrix (L<sub>REGIONAL</sub>) in the following manner:

$$L_{REGIONAL} = (\lambda'A)^{-1}$$

Where:  
λ is a 64 x 64 diagonal matrix of regional-supply ratios  
A is a 64 x 64 matrix of input-output coefficients

The regionalised Leontief inverse matrix is then used to calculate the indirect output vector.

$$y_{REGIONAL} = x' L_{REGIONAL}$$

Where:  
y<sub>REGIONAL</sub> is a 1 x 64 vector of changes in output (y<sub>i</sub>) in a given geographic jurisdiction  
x is 64 x 1 vector of input-purchase expenditures (by receiving industry)  
L<sub>REGIONAL</sub> is the 64 x 64 regionalised Leontief inverse matrix

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