

# **AMD Submission to the Commission Consultation on State-Aid for Innovation**

## ***ABOUT AMD***

Advanced Micro Devices, Inc. (AMD) is a global supplier of integrated circuits for the personal and networked computer and communications markets with manufacturing facilities in the United States, Europe and Asia. AMD, a Fortune 500 and S&P 500 company, produces microprocessors, flash memory devices, and support circuitry for communications and networking applications. Founded in 1969 and based in Sunnyvale, California, AMD had revenues of \$5.0 Billion in 2004. (NYSE: AMD). AMD has brought innovation to Europe. Our Dresden wafer fabrication facility, known as AMD Fab 30 and the recently opened Fab 36, are some of the most innovative semiconductor sites in the world. Building on a solid local base of semiconductor experience and engineering know-how, Fab 30 has become a leader in manufacturing, a focal point for industry partnerships with companies like IBM and Motorola, and a leader in environmentally-friendly operations. The positive impact of Fab 30 is not limited to AMD. The presence of Fab 30 has contributed to the creation of “Silicon Saxony”, a cluster of high-technology companies that currently employs about 25,000 people.

## ***AMD in Europe***

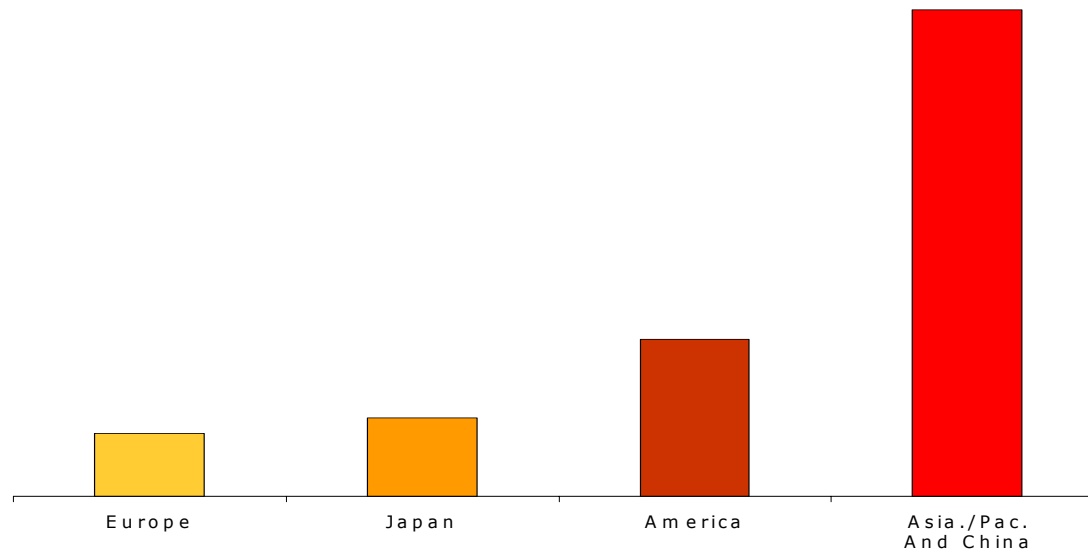
For Europe, however, AMD’s contribution to innovation is perhaps unique as a company that deliberately delocalised itself INTO Europe. AMD’s presence and its innovations contribute to Dresden, Germany and Europe, adding value well beyond local manufacturing. AMD contributes to the growth of innovation in many ways, e.g.:

- It is a large scale employer of highly skilled persons as 40% of AMD staff have university degrees;
- It is a leading partner in the Silicon Saxony cluster together with German, European and global partners such as Infineon, ZMD, Siltronic, DuPont Photomasks, Air Liquide;

- The establishment of the Dresden Design Center, Center for Nanotechnologies and the Advanced Mask Technology Center are a direct consequence of the presence of the AMD fabs in Dresden;
- local, regional and European technology partners in universities from Dresden, Chemnitz and others to the Max Planck Institute or Fraunhofer Institute are closely involved with AMD innovations;
- global European technology leaders like Carl Zeiss Jena and ASML of the Netherlands work with AMD to push the limits of innovation even further;
- a typical technology start-up like SOITEC of France, issued from French fundamental research is now a star of the nouveau marché thanks to AMD's adoption of their Silicon-on-Insulator Technology.

The list could go on and on, but the notion to retain is that the presence of the AMD fabs in Dresden has made a quantum difference to the ability of Europe to compete with the rest of the world. AMD has been successful in Europe because of the eco-system that it found in Europe: people, infrastructure and a positive attitude to inward investment. This eco-system is fragile, however:

**Figure 1 Inward investment in Micro-electronics 2002**



AMD's investment in Fab 36 helped push Europe to third place on the global ICT investment investments scoreboard. Depending on one company to maintain and advance that position is not a sustainable or stable eco-system plan for Europe.

### ***The Fab is the lab***

An important element not often understood by outsiders is that in high-technology and certainly in semiconductor research and development cannot take place without a fab actually producing something. Inevitably this means that R&D, innovation, manufacturing and production are taking place in the same location and sometimes with many of the same people being involved in all of these functions. In AMD's Fab 30 – and Fab 36 will not be different – there is no single generation of the finished product that is identical when issuing from the fab. In the weeks it takes to produce a finished wafer with microprocessors a new innovation, small or large, will have been implemented. This cannot be done inside a university or even company research facility alone but requires direct intervention in the manufacturing process of finished products that will be sold to customers around the world. Innovations that meet customer needs are the only ones that add sustainable growth to a company's eco-system.

As a consequence, in the semiconductor industry the distinction between R&D, innovation, manufacturing and production has become blurred. The Commission itself has stated:

*“dans certains secteurs de technologie, l'interpénétration entre la recherche scientifique de pointe et ses applications technologiques est telle qu'il peut être utile pour les industriels de participer à de tels travaux. Le secteur de la nanoélectronique est l'exemple le plus frappant de ce type d'interpénétration.”<sup>1</sup>*

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<sup>1</sup> Commission Decision of 23.7.2003, State Aid N 39/2003 – France, p. 5.

## ***AMD and innovation***

As a technology leader producing some of the most complex machines ever made, it would be easy to suppose pure R&D forms the exclusive basis of AMD's success. Since the beginning, our focus has gone beyond integrated circuits and transistors. AMD is committed to helping our customers - and their customers – to use silicon to add value and help differentiate their offerings. After all, our customers' success is our success. That's why AMD products are always developed with customer needs in mind and not for the sake of R&D alone. We provide real solutions for real customer problems that exist in the real world today. It's a philosophy we refer to as "customer-centric innovation," and it represents the guiding principle behind everything we do. AMD therefore welcomes the Commission's initiative to bring forward a discussion of innovation and state aid. AMD believes the current ex-ante rules for aid to R&D and also the ex-post rules related to technology investments used by the Commission are not as practical or effective as they should be. Innovation is more than R&D and should be recognised as such by the Commission.

## ***Silicon Saxony***

Silicon Saxony is one of the few regions that was able to attract foreign investors to Europe. At present, a homogenous mixture of universities, research institutes, SMEs and large companies is based in Dresden. Large companies were attracted to Saxony by various factors, among them state aid. The initial and the ongoing major investments by AMD, Infineon and ZMD lead to a "cluster effect", resulting in the inward location of new suppliers, users and service providers to Silicon Saxony and the expansion of existing suppliers and users.

Today, numerous companies in the semiconductor sector are present in Saxony, such as Siltronic, AMTC, ASML, Applied Materials, ATMI, Air Liquide, Axcelis, Centrotherm, Novellus Systems, KLR Tencor, DuPont Photomasks, Metron, Semitool, M&W Zander, Tokyo Electron, INTEGA, Merck, Pürstinger High Purity Systems or Philips Semiconductors.

AMD works closely with university and research institutions, such as Technische Universität Dresden, Technische Universität Chemnitz, Technische Universität Cottbus, Technische Universität Ilmenau, Westsächsische Hochschule Zwickau, Fraunhofer-Gesellschaft, Bergakademie Freiberg, HTW Dresden, Leibniz Institut Dresden, and many others. Silicon Saxony currently includes more than 800 undertakings and employs about 25,000 people.

### ***Innovation and state aid***

AMD has benefited from state aid to invest and to innovate in Europe, and this was a factor in its decision to locate in Europe. Although other considerations, including qualified staff, raw materials, and industrial partners, were directly relevant to AMD's decision, aid to innovation helps create an eco-system that fosters growth and competitiveness. That eco-system is critical to the success of companies like AMD and becomes a key factor in location decisions. A recent ESIA study indicated that US and Asian incentive schemes are directly aimed at bringing in massive inward investment for the single purpose of attracting investment to mirror the success of Silicon Saxony or similar achievements in other regions, such as Grenoble and Silicon Valley. Although the focus of the Commission is Europe, the market we operate in is global, and the Commission must not restrict its assessment of the impact that aid schemes have within Europe. Perhaps these schemes in third countries, which are not subject to any state-aid controls, should be termed market failures in their own right. Regardless of perspective, Europe cannot afford to restrict the assessment of an aid scheme to a purely European equation and ignore the reality of the global marketplace.

### **Questions**

- 1) AMD believes it is essential that new possibilities for state aid target innovation related activities. The current rules are impractical, because they do not reflect actual practice in the market. A completely foolproof description of innovation is probably impossible, but as long as competition is not distorted or a market failure corrected, the rules should be flexible.

*Question 1) Do you think it is appropriate not to create a separate Framework for Innovation and the new possibilities for state aid target selected innovation-related activities?*

Any other approach will frustrate entrepreneurs who find themselves engaged in dogmatic discussions as to whether a particular type of innovation can be placed in a theoretical state-aid box. To name an example, AMD found out that metrology research, which is aimed at measurements on the atomic level, is not eligible for state aid, apparently because it is considered a production process. However, without improvements in metrology, we cannot validate the increasingly smaller atomic scales required for new inventions.

From our point of view, it is of minor importance whether the new rules on state aid for innovation are incorporated within the existing R&D Framework or whether a new separate Framework for Innovation is being created. The creation of a different set of innovation rules, however, would lead to further fragmentation of the state rules and would be contrary to the objectives of the State Aid Action Plan which aims at simplifying the legal framework and increasing its transparency. It might, therefore, be preferable if the existing R&D Framework would be extended by this new aid category.<sup>2</sup>

- 2) AMD believes the annex outlines some real problems and challenges to fostering innovation in Europe. However the overview is far from complete and we would like to add at least three points to the overview:
  - a. Global competition for innovation-related investment  
Other nations, particularly in Asia, offer huge incentive packages for companies to delocalize into their region<sup>3</sup>. The incentives go well beyond offsetting for local deficiencies, such as lack of qualified personnel. To be successful, Europe must realize and understand that it competes globally for innovation investments.

*Question 2) Do you think the problems presented in the Annex and the market failures identified by the Commission as hampering the innovation process are accurate? If so, why and if not, why not?*

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<sup>2</sup> In the past the Commission has also used the term “innovation aid” as a synonym for “R&D aid”, see f.e. Press Release IP/05/302.

<sup>3</sup> The Commission recognised this problem, cp. Commission Decision of 23.7.2003, State Aid N 39/2003 – France, p. 5, if the undertakings in Europe are not able to develop as quickly as their competitors in the US, Japan and Taiwan, they will soon be marginalised; the US, Japan and Taiwan would have granted considerable incentives to the project that now takes place in Crolles.

If Europe wants to “win” the international location competition, it has to grant adequate incentives to innovative companies. China, Japan, Korea, Malaysia, Singapore, Taiwan, Israel and the US have developed special incentive schemes to attract and retain foreign semiconductor investment, regardless of company size. The Consultation document of the Commission, on the other hand, indicates that aid for large innovative companies will be reduced. Large investments are necessary for leading-edge semiconductor manufacturing facilities. R&D is capital intensive, requires know-how, and long development periods are common. Investment schemes have been crucial for supporting the build up of a competitive and distinctly European semiconductor industry, but incentive programs in other regions are becoming more competitive. For example, the net cumulative income generated from the set up of a leading-edge model fab is 220% higher in China, Korea and Malaysia than in Germany. Known variables such as lower wages, lower social costs and higher number of working hours are factors, but the main single difference is more favourable incentive schemes in those high growth markets.

b. Market failure also affects large companies

The Commission seems inclined to confine market failures to situations where SMEs do not receive enough support for innovation. In the Commission’s view “*it is not clear to what extent large firms are affected by market failures.*”<sup>4</sup> The Commission’s approach to determining market failures appears inappropriate, because large companies can be and have been hampered in innovation by market failures as well.

c. Dominant player

As the Commission is well aware, AMD is locked in competition with a super dominant player in the microprocessor segment. This particular market structure constitutes a market failure: AMD alone is currently in the position to build up a competitive counterweight to this overly

*Question 3) Do you think an ex-ante approach is adequate?*

*Question 4) Stakeholders are invited to provide empirical evidence about the appropriateness of authorizing State Aid to large companies, in particular in connection with the objective of developing clusters around poles of excellence in the EU. Do you think the Commission should develop ex-ante rules allowing state aid for Innovation to the benefit of larger companies, or that such aid should always be subject to a stricter case-by-case analysis on the basis of a notification to the Commission? As far as support to innovation is concerned would it be appropriate to distinguish between different categories of large companies? If so on the basis of which criteria?*

<sup>4</sup> Consultation document on State aid for innovation, para. 15 fn. 3.

dominant competitor. In order to be able to continue, AMD is dependent on AMD Fab 30 and AMD Fab 36 in Dresden, which were partly financed through State aid.

Consequently, although AMD is a large company, it is affected by a market failure that may be corrected due in part to successful innovation aid programs.

- 3) A pure ex-ante approach is not likely to be adequate for large companies as there will be insufficient guarantees that competition will not be distorted; the development of innovation and its result are hard to predict. An ex-ante approach may, however, suffice for SME's.
- 4) AMD refers to the description of the Silicon Saxony cluster as empirical evidence of the appropriateness of allowing aid to large companies in particular with respect to developing poles of excellence with global reach. Independent studies have confirmed that the major investments by AMD and Infineon have led to the success of Silicon Saxony. This has been shown by a study of the independent German research institute DIW:

*„Pro geschaffenem Arbeitsplatz in den [Dresdner] Halbleiterwerken [entstehen] selbst ... noch einmal rund 1,5 zusätzliche Arbeitsplätze in anderen Bereichen der Wirtschaft. Der überwiegende Teil der Beschäftigungseffekte der Ansiedlung der Halbleiterwerke entfällt auf die Region Dresden..“<sup>5</sup>*

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Dietmar Edler et al., "Gesamtwirtschaftliche und regionale Bedeutung der Entwicklung des Halbleiterstandorts Dresden - Eine aktualisierte und erweiterte Untersuchung", Deutsches Institut für Wirtschaftsforschung (DIW) (2002).



According to the study, AMD's Fab 30 as well as the Infineon and ZMD fabs had the decisive "kick-off"-effect which lead to this cluster, resulting in the location of new suppliers, users and service providers to "Silicon Saxony" and the expansion of the existing suppliers and user network. Today, numerous companies in the semiconductor sector are present in Saxony. However, only the investments by large companies, which have received state aid, made the region attractive for SMEs. This example shows that the combined use of R&D and innovation aid and regional aid to large companies creates an environment that is attractive for SMEs.

We generally agree that it is necessary to support SMEs that do not have access to the capital market by way of granting State aid. However, large companies drive major developments.. A good example of a major development is AMD's introduction of 300 mm wafer technology. Development and subsequent production of microprocessors, including 300 mm wafer technology, is a long-term project. R&D in semiconductors requires economies of scale, know-how and is capital-intensive. The Commission's idea of small start-ups that invent new technologies in their garage is unrealistically romantic. Excluding large companies from the program and limiting subsidies to SMEs or small innovative start-ups will not lead to substantial progress in R&D and innovation for new technologies. The Commission must consider large undertakings for State aid innovation grants, or risks slowing down innovation that will lead to the creation of employment of the sort we find in Silicon Saxony, which currently employs 25.000 people.

Furthermore, we would refer to the Commissions' own annex to the consultation, where it mentions a number of European innovation successes, such as Airbus, and high – speed trains. In fact, the only successes the Commission mentions are related to aid to large companies. Innovative SMEs are important, but innovative large companies can be as, if not more, valuable to Europe. AMD has shown that direct revenues (tax income, economic upstream and downstream benefits) of aiding innovation can both outweigh the original investment and significantly benefit the broader eco-system of European innovative industries<sup>6</sup>.

The exclusion of large companies from innovation aid would also be contrary to the Commission's approach to R&D, which consistently recognizes the value of supporting large companies in the semiconductor industry.<sup>6</sup> State aid for innovation serves similar purposes as R&D aid, and the two should be treated similarly.

In addition to the Commission's decision practice, its policy concerning R&D in the high-tech sector, in particular in nanotechnology, aims at enhancing innovation<sup>7</sup>. The Council of the European Union pointed out the important role and potential of the nanotechnologies and underlines that „*with a view to maintaining and reinforcing European scientific excellence and industrial competitiveness, it is important to continue to generate scientific and technological knowledge in nanotechnology and to encourage its use in industrial applications*”.<sup>8</sup> In its Action Plan for nanosciences and nanotechnologies<sup>9</sup> the Commission calls for collaboration in R&D in nanosciences and nanotechnologies. In particular, the Commission will reinforce R&D under the seventh framework programme and has proposed a doubling of the budget compared to the sixth framework programme. R&D in this field is very costly and can typically only be borne by larger companies. The exclusion of large companies from innovation aid would be inconsistent with the objectives of the R&D program.

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<sup>6</sup> See for example Commission Decision of 16.2.2005, State Aid N 172/2004 – France; Philips Semiconductors; Commission Decision of 19.5.2004, State Aid N 478/2003 – France; MEDEA+; Commission Decision of 16.3.2004, State Aid N 359/2003 – Altis Semiconductor; Commission Decision of 29.10.2003, State Aid N 116/2003 – Germany; Commission Decision of 25.6.2003, State Aid N 8/2003 – France; MEDEA+; Commission Decision of 23.7.2003, State Aid N 39/2003 – France.

<sup>7</sup> Communication from the Commission, Towards a European strategy for nanotechnology of 12 May 2004, COM(2004)338 final, p. 3; [ftp://ftp.cordis.lu/pub/ist/docs/eniac/nanoelectronics\\_vision2020](ftp://ftp.cordis.lu/pub/ist/docs/eniac/nanoelectronics_vision2020) Press release: „Making the future with nanoelectronics: a strategy for Europe“, [ftp://ftp.cordis.lu/pub/ist/docs/eniac/press\\_release.pdf](ftp://ftp.cordis.lu/pub/ist/docs/eniac/press_release.pdf).

<sup>8</sup> Council of the European Union, Press Release 2605<sup>th</sup> Council Meeting, 12487/04, p. 24.

<sup>9</sup> Communication from the Commission of 7.6.2005, Nanosciences and nanotechnologies: An action plan for Europe 2005-2009, COM(2005)243 final.

Large companies enhance economic growth. For example, the semiconductor industry is widely recognized as a key driver for economic growth in its role as a multiple lever and technology enabler for the whole electronics value chain. The pace of performance improvement in microprocessors is exponential and drives innovation in other areas by lowering the cost of business and enabling a stream of new product and service opportunities. Supercomputers, digital entertainment or the Airbus A 380 aircraft family benefit from state-of-the art microprocessors for their design, creation or operation.

To be clear, not all large companies are innovative or need support to innovate, but the same is true of SMEs. Successful innovation by large scale companies has more immediate and long term benefits than unstructured piecemeal assistance to SMEs. A case-by case approach is necessary to address the global competition for innovation investment, all relevant market failures, and potential distortion of competition on the product market. Such an assessment needs to be outside of dogmatic criteria such as production lines or the type of personnel involved but directly on market analysis. Developing clusters such as Dresden, Louvain or Grenoble is not only valuable for but vital to the European Union's competitiveness and our future prosperity.

If the Commission believes that State aid to large companies might have more distorting effects than State aid to small companies, we generally welcome specific notification requirements for large companies. Under the current R&D framework<sup>10</sup> aid has to be notified if projects costs exceed 25 €million. We agree that above this threshold a notification of State aid for innovation could be necessary. Concerning the evidence that should be requested by the Commission for the notification, the notification form that the Commission recently introduced contains appropriate questions<sup>11</sup>.

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<sup>10</sup> Community framework for State aid for research and development, OJ 1996 C 45/5.

<sup>11</sup> Commission Regulation (EC) No 794/2004 of 21 April 2004 implementing Council Regulation (EC) No 659/1999 laying down detailed rules for the application of Article 93 of the EC Treaty, OJ 2004 L 140/1.

5) –

6) Cohesion and innovation aid are not necessarily related. However, in some regions there is a lack of availability of skilled labour force or the infrastructure is less developed. Thus, additional costs must be considered. In principle, AMD welcomes the regional bonus approach for dealing with cohesion issues.

7) This question cannot be answered in general. The aid scheme, regardless of form, should encourage genuine innovation rather than being a mere financial reward for doing the right thing. The program should address the customer's needs with the end result of the aid rather than the bottom line of the recipient of the aid. In cases of large aid, equity stakes can play a role, because they benefit entrepreneurial success of the venture. In other cases, a tax scheme may be more appropriate.

8) Innovative start-ups should be beneficiaries of state aid. However, the Commission mentions that the high-tech sectors like biotech have the problem of long time-to-market and product development cycles as well as high product development costs. The same is true of the semiconductor sector, so these problems are not confined to innovative start-ups and SMEs. The Commission should ensure that any eligibility criteria it establishes address all relevant sectors with consistent and fair principles.

9) –

10) The Commission proposes to envisage more flexibility for assessing aid provided in the form of risk capital and to consider specific provisions for post-seed stages in order to facilitate the growth of enterprises. AMD welcomes the Commission's propositions. However, for the reasons set out above in response to Question 4, we believe that the improvements should not be limited to SMEs.

*Question 6) Should the rules on State Aid for innovation include regional bonuses for cohesion purposes? Should they differ according to geographical situation of the region, irrespective of cohesion issues.*

*Question 7) Are some types of aid more suited to specific situations and specific innovation activities (ex: tax rebates, secured loans, repayable advances)?*

*Question 8) Do you agree with the proposed criteria to define innovative start-ups, with the approach of not defining eligible costs, with the amounts of aid and cumulation rules?*

*Do you think that different eligibility criteria should be established for high-tech sectors like biotech and pharmaceuticals which have long time-to-market and product development cycles?*

11) In its consultation document the Commission wants to extend State aid to “activities close to the market”. In this regard a new category of pre-competitive activities called “experimental development stage” might be introduced<sup>12</sup>. Additional activities could be deemed to constitute compatible aid, such as the development of commercially usable prototypes and pilot projects or expenses for the production of the first pre-series batch.

AMD welcomes the Commission’s proposition and is encouraged that the Commission is prepared to accept a broader notion of innovation. Up until now, compatible State aid has been limited to fundamental research, industrial research and pre-competitive development activity excluding routine or periodic changes made to products, production lines, manufacturing processes, existing services and other operations in progress, even if such changes may represent major technological steps<sup>13</sup>.

Innovation does not only consist of fundamental research but includes the implementation of the results. In some sectors, a material part of the innovation is carried out where and when the products are manufactured. As explained above, the “fab is the lab” approach in AMD Fab 30 has given Dresden its competitive edge.

12) The provisions definitely should be extended to large companies and in the case of substantial amounts should be subject to a notification procedure. Because of the tremendous fixed costs associated with innovative high-technology investments, the Commission should not deal with projects below €25 million separately. Larger amounts should be justified primarily on:

- the value of the investment within the technology cluster at stake;
- the risk of such investment being delocalized outside the EU;
- the market failures preventing this and other companies from operating in a genuinely competitive market;
- the pay-back period of the aid based on an objective criteria such as tax income and chain effects;

<sup>12</sup> Consultation document on State aid for innovation, para. 49.

<sup>13</sup> Community framework for State aid for research and development, OJ 1996 C 45/5, Annex I.

*Question 10) Do you think that other types of State aid apart from those currently granted in respect of risk capital are required in order to help European SMEs grow beyond the start-up phase? If so, which ones?*

*Question 11) Do you think that these provisions would produce the expected effects in terms of encouraging SMEs to launch innovative products in the market? If not, what changes should be made to these rules?*

*Question 12) Is there evidence that these provisions should be extended to large companies? Do you think that notification should be required for measures granting substantial amounts of aid to individual firms or individual sectors? If yes, above what amount? What empirical evidence should then be requested by the Commission?*

- and most importantly whether the aid would distort competition on the product market.

13-15) –

16) The Commission states that clusters are “groupings of innovative start-ups, small, medium and large enterprises as well as universities or research institutions, operating in a particular sector and region and designed to stimulate innovative activity by promoting intensive interactions”.<sup>14</sup> They add that clusters need to have a critical mass and that they have to create a proper balance of SME’s and large firms. In this regard we want to highlight that the inclusion of large companies in clusters is crucial for their functioning and success. Clusters will contribute to development and economic growth only if large companies participate. We refer the Commission to the success of both the US Silicon Valley and Silicon Saxony. For these reasons, it is important that large companies are included in any type of cluster-specific type of aid. AMD suggests that within the framework of a consistent policy to develop clusters or centres of excellence, a ‘cluster bonus’ should be permitted. Such a bonus should be awarded for any investment – large or small – that is aimed at increasing the sustainability of the cluster or pole of excellence within the framework of a globally competitive market.

17) State aid is necessary for the promotion of European centres of excellence. It provides one of the incentives that are necessary to create an environment which consists in a homogenous mixture of universities, non-university enterprises, SMEs and large companies.

18) Choices should be made about the locations for the poles of excellence to compete in a global environment. It does not seem useful to encourage duplication among or inside Member States of particular technology pools.

*Question 16) What definition of cluster/clustering activities should be followed and what criteria should be used to distinguish clusters from the broader category of innovation intermediaries?*

*Question 17) Do you think that State aid should be allowed to promote European centres of excellence? If so, what type of State aid, for what reasons, and subject to what conditions? What other, possibly better, measures could be envisaged?*

*Question 18) Are additional criteria needed to avoid State aid being fragmented and to encourage the concentration of resources in a limited number of poles of excellence?*

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<sup>14</sup> Consultation document on State aid for innovation, para. 64.

19) –

20) Large firms should be entitled to state aid. The investments required for large firm location and maintenance are substantial and can be prohibitive without state aid. For example, the semiconductor industry typically requires capital expenditures in semiconductor plants or fabs of up to 25% of annual revenues and spends 20% of annual revenues on R&D and innovation. State aid for these large firm investments leads to the development of centres of excellence and contributes to European competitiveness in the global market.

The rules applied to large companies should not be stricter than the rules applied to other companies. However, AMD does not oppose a notification requirement for large companies. To analyze the necessity of state aid to a particular large company, the Commission could request economic evidence of the type outlined in answer to Question 12 above.

*Question 20) Do you think that large firms should be entitled to State aid, e.g. to establish research facilities in a European pole of excellence? Should the Commission try and develop specific criteria to control such State aid? What type of economic evidence should be requested to analyse the necessity of such State aid?*