

# The European patent system and the grace period

An impact analysis

June 2022 | Executive Summary

## Executive summary

The grace period was the starting point for global discussions on the international harmonisation of substantive patent law, and has remained the crux of the exercise. It is an intensely debated topic especially in Europe, since the European Patent Convention (EPC) does not provide for a grace period, but instead contains a strict novelty requirement. The purpose of this study is to inform current debates on this matter by providing an evidence-based assessment of the potential economic impact of the introduction of a grace period in Europe.

The grace period is a period of time prior to the filing date or priority date of a patent application, during which an inventor can disclose his invention without this destroying its novelty for patenting purposes. It prolongs the period of legal uncertainty (from 18 months to up to 30 months) during which the public may not be able to assess conclusively whether a disclosure forms prior art or not, thereby increasing the risk of unintentional infringement by third parties. The creation of a grace period therefore entails a trade-off between the flexibility gains it may generate for applicants and the legal uncertainty experienced by third parties as a result of its use.

There are many ways in which the grace period can be defined and used, and the international landscape in this respect is a patchwork of different regimes. Depending on the balancing mechanisms (such as declaration requirements or prior user rights) that have been established to mitigate legal uncertainty, applicants may use the grace period as a safety net to salvage patent applications in the event of accidental pre-filing disclosures, as an opportunity to accelerate scientific publications or communications, or as a convenient means to buy time to improve the invention and start promoting it prior to drafting and filing a patent application. The liberty granted to applicants to use the grace period is thus a key determinant of both the benefits and legal uncertainty that it may generate.

The present study aims to provide a fact-based, quantitative assessment of the potential economic impact of the possible introduction of the grace period in Europe. For this purpose, as a first step our analysis focuses on EPO applicants' current responses to the strict novelty requirement under the EPC. First, this data measures the magnitude of the difficulties experienced by applicants as a result of the strict novelty requirement. Second, it is used to estimate the potential baseline frequency of grace period requests for European patents should a grace period be introduced in Europe. Finally, we will analyse EPO applicants' responses to different grace period scenarios, each involving specific balancing mechanisms, to assess the frequency and origins of potential grace period requests, as well as their impact on legal uncertainty, in each scenario.

The study primarily draws on new empirical evidence collected via a broad survey of applicants who filed patent applications with the EPO in the past three years, i.e. the calendar years 2018, 2019 and 2020. This survey departs from prior studies in that it aims to collect evidence on the respondents' actual behaviour rather than their opinions or preferences. As a complement to the survey, we also consulted representative associations and federations of EPO users and stakeholders in Europe to gather further insights into systemic effects of the grace period that individual respondents in the survey may fail to grasp in full. Further relevant material has been collected through desk research and the kind provision by the Japan Patent Office (JPO) and Korean Intellectual Property Office (KIPO) of recent statistics on the use of the grace period in their respective jurisdictions.

## Key findings

**European EPO applicants generally manage to comply with the strict novelty requirement, although universities experience more frequent issues than other entities due to pre-filing disclosures**

European companies mainly comply with the EPC novelty requirement by postponing disclosures, thereby avoiding in most cases the more serious consequences of being prevented from filing a European patent application. Only a small share of their patent applications required the postponement of disclosures (2.3%) or were prevented by pre-filing disclosures (0.8%). Although European SMEs reported a larger proportion of patent applications that required the postponement of disclosures (10.4%), the share of their applications that were prevented by pre-filing disclosures (1%) is very close to that of other European companies.

Like European companies, European research institutions most often comply with the EPC novelty requirement by postponing scientific publications or communications, thereby mitigating the risk of failed patent applications. However, universities have much higher shares of patent applications with either delayed disclosures (12.1%) or pre-filing disclosures (7.8%) than European companies. Moreover, these inventions are typically science-based, and as such present significant economic potential. This denotes an inherent tension between the need to disclose research results early in an open-science environment and the need to secure patent protection of those results in order to enable their commercialisation.

Unlike European applicants, US, Japanese and Korean companies show a higher share of applications prevented by pre-filing disclosures than of applications that were filed following the postponement of disclosures. This demonstrates a more frequent failure to comply with the strict novelty requirement under the EPC, possibly due to the use of grace periods in their national patent systems.

Table E.1

Estimated impact of the strict novelty requirement by EPO applicant category

| Applicant category            | % of EP applications that required the postponement of a disclosure | % of EP applications prevented by a pre-filing disclosure |
|-------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------|
| European SMEs                 | 10.4%                                                               | 1.0%                                                      |
| Other European companies      | 2.3%                                                                | 0.8%                                                      |
| European universities         | 12.1%                                                               | 7.8%                                                      |
| European PROs                 | 6.6%                                                                | 3.7%                                                      |
| US companies                  | 4.1%                                                                | 7.2%                                                      |
| Japanese and Korean companies | 0.4%                                                                | 2.3%                                                      |

The results reported in the last two columns are estimated shares of all the European patent applications filed by the respondents in the last three years.

Source: EPO survey on the grace period.

**In the few cases where it occurs, failure to comply with the strict novelty requirement under the EPC may have serious economic consequences**

Being prevented from filing a patent application by a pre-filing disclosure is more likely to have direct economic consequences for innovation – such as lost opportunities to develop or commercialise the invention – than the mere postponement of a disclosure until the filing of an application. Against this backdrop, a majority of respondents in each category have established disclosure policies to prevent pre-filing disclosures and their consequences.

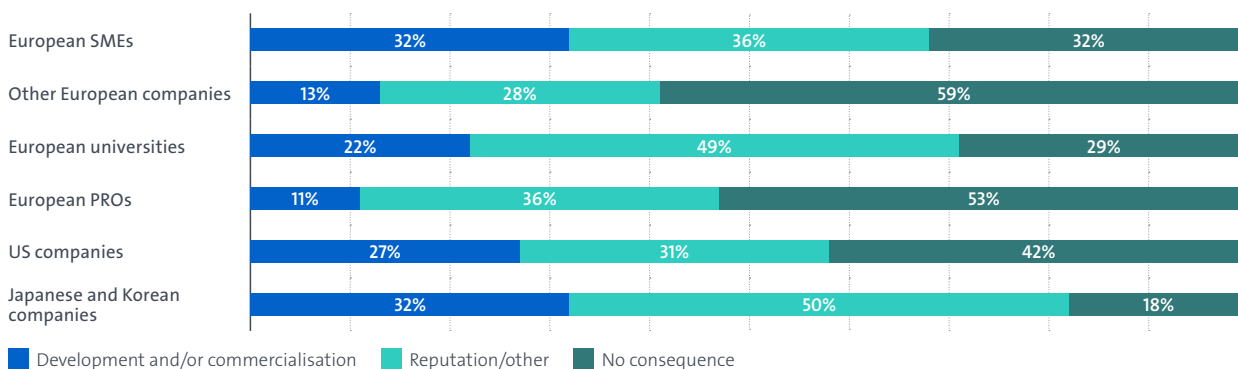
However, the impact of patent applications prevented by pre-filing disclosures varies according to applicant category. It is highest among European universities, for which 71% of failed patent applications entail lost opportunities of developing or commercialising inventions stemming from scientific research. European SMEs and Japanese or Korean respondents are also likely to experience direct economic consequences (for 60% and 61% of the patent applications that they cannot file due to pre-filing disclosures respectively). In comparison, such consequences are less frequent for larger European companies (30%) and for US companies (27%).

Figure E.1

**Main consequences of postponed and pre-filing disclosures under a strict novelty requirement**

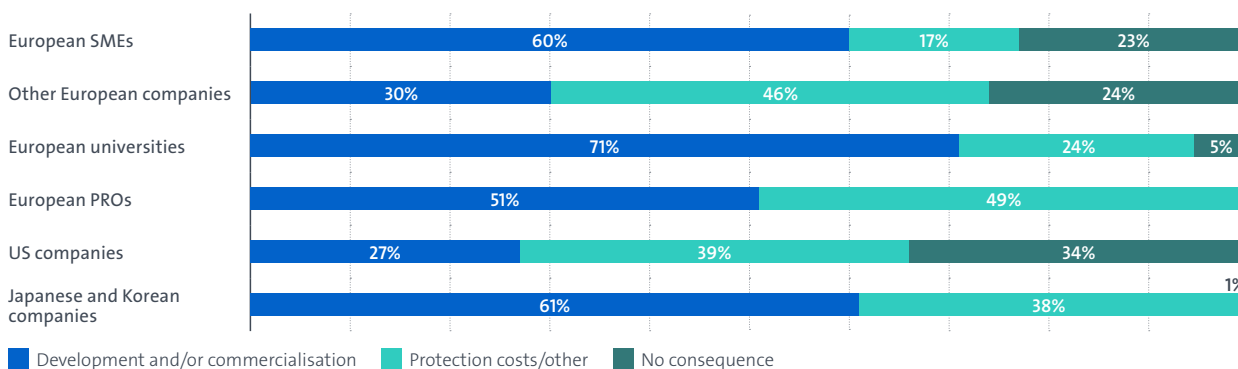
**a. Main consequence of postponed disclosures**

Share of patent applications that required the postponement of a disclosure



**b. Main consequence of patent applications prevented by pre-filing disclosures**

Share of patent applications prevented by pre-filing disclosures



The results reported are estimated shares of all European patent applications filed by the respondents in the last three years.

Source: EPO survey on the grace period

**Data shows that the strict novelty requirement creates problems for applicants in approximately 10 000 cases a year. Consequently, if the EPC made provision for a grace period, the baseline potential volume of EP-application-related requests invoking the grace period can be estimated at approximately 10 000 annually. This corresponds to 6% of the European patent applications filed in 2021**

Overall, the survey results suggest that there are just over 10 000 cases every year in which EPO applicants experience problems in complying with the strict novelty requirement under the EPC. These represent approximately 6% of the European patent applications filed in 2021. US applicants are involved in about half of these instances (with 5 260 cases), and European companies in another third of them (with 3 870 cases). With 840 cases, Japanese and Korean applicants account for less than 10% of problematic cases, and with 620 cases, European research institutions for only 6%.

EPO applicants typically experience problems with the strict novelty requirement in cases in which they would have invoked the grace period if it had been available in Europe. Accordingly, the number of such cases provides a baseline estimate of the potential number of grace period requests at the EPO, should a grace period be adopted in Europe. This estimated potential is equally distributed between cases in which applicants would use the grace period in order to salvage a patent application from an accidental pre-filing disclosure ("safety net"), and cases in which they would be able to comply with the strict novelty requirement by postponing a disclosure, but would prefer instead to proceed with the disclosure and invoke the grace period (pro-active use).

The direct use of a grace period in Europe as a safety net (i.e. where a pre-filing disclosure was not prevented, so that an application could not be filed) could concern up to 5 000 European patent applications every year, which corresponds to about 3% of all applications filed with the EPO in 2021. US applicants alone would account for about two thirds of these requests (i.e. for 3 350 patent applications), reflecting both their high exposure to pre-filing disclosures and their large share (25%) of European patent applications overall. In comparison, Japanese and Korean applicants would use a European grace period as a safety net for only about 700 patent applications (i.e. 14% of all requests), large European companies for 500 applications (10%), European research

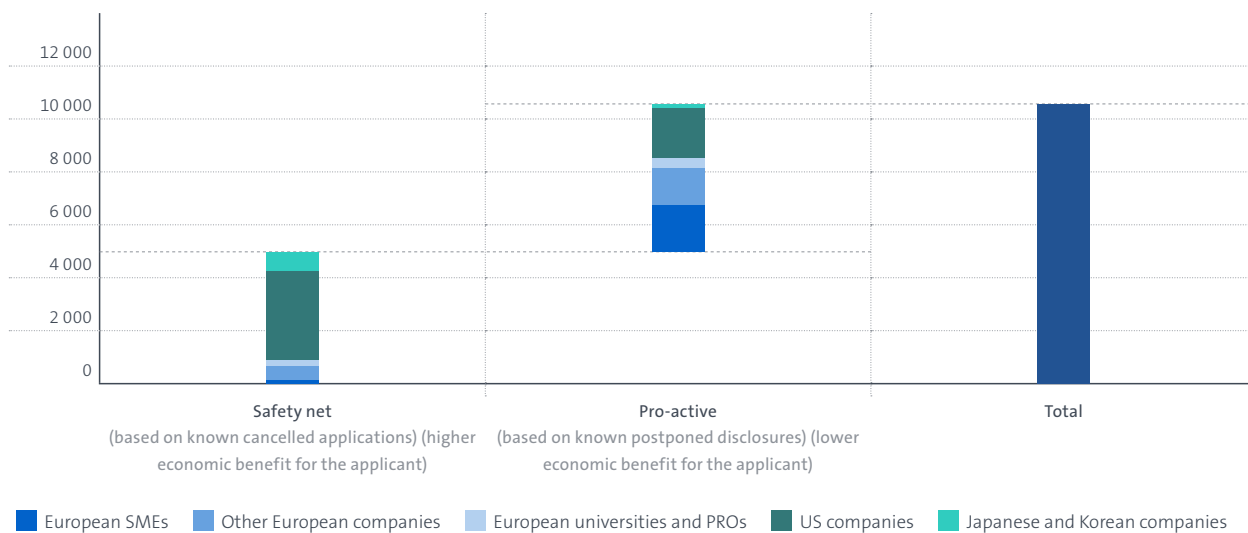
institutions for about 250 (5%) and European SMEs for about 170 (3%).

The pro-active use of a grace period as an alternative to the postponement of a disclosure could generate another potential 5 000 requests (or 3% of all applications filed with the EPO in 2021), on a par with the potential use of the grace period as a safety net. The largest share of potential uses again would lie with US companies, with about 1 900 grace period requests (34%), but European SMEs would account for a nearly equivalent share (31%) with about 1 740 requests, and other European companies for another 26% with 1 445 requests. The degree to which European companies would proactively exploit that opportunity likely depends on whether or not they would retain the discipline currently formalised in their disclosure policies, which in turn would depend on the design of the grace period and the balancing mechanisms which would be provided (see next key finding). By contrast, the potential for European universities (7%, with about 370 requests) and Japanese or Korean companies (2%, with about 125 requests) to use the grace period proactively in Europe would appear to be limited in volume compared to corporate applicants.

It must be noted that these estimates are primarily based on observations of the EPO applicants' behaviour under the strict novelty requirement currently in place under the EPC. Therefore, they do not account for further changes of applicant behaviour which might also take place should a grace period be introduced in Europe as a result of an internationally harmonised grace period. The changed legal framework providing this new option would almost certainly result in (a) changed disclosure policies, and hence also in (b) changed behaviour on the part of applicants. This would result in a higher uptake of the grace period that would be difficult to estimate. Although our methodology aims to capture such changed behaviours, it does not account for behaviours which might go beyond the mere remedying of current difficulties and involve a more strategic use of the grace period, that option becoming available, particularly since the EPC would no longer form an obstacle to the use of grace periods in foreign jurisdictions. Of course, the extent of such policy and behavioural changes would depend on the design of the grace period; hence the necessity of the survey section on different grace period scenarios.

Figure E.2

Potential impact of a grace period (in annual number of requests)



Source: EPO survey on the grace period and EPO Patent Index 2021

**While an unrestricted grace period in Europe would introduce significant legal uncertainty in the European patent system, a declaration requirement and prior user rights could help preserve the balance in the system**

The assessment of the issues currently experienced by EPO applicants with the strict novelty requirement suggests that the introduction of a grace period in Europe could generate economic benefits. European research institutions would for instance be in a position to use the grace period as a safety net to develop and commercialise science-based inventions, while only generating a modest number of grace period requests. However, the introduction of the grace period would also trigger a large number of potential requests that would likely increase legal uncertainty and complexity without generating such direct benefits for innovation.

The survey does not capture the impact of legal uncertainty on third parties who are not EPO applicants. Even so, by surveying users on the various scenarios we have been able to gain insights into the systemic ramifications of the legal uncertainty deriving from the increased difficulty in establishing whether a disclosure has become part of the public domain and, as such, forms part of the prior art, which would potentially impact all stakeholders in the innovation process, both applicants and third parties.

The respondents who expect significant legal uncertainty after the introduction of a grace period (Figure E.3 b) represent a proportion of European patent applications which largely exceeds the proportion of patent applications for which the grace period would likely be invoked (Figure E.3 a). This discrepancy illustrates the tension between the perceived benefits of the grace period in individual cases and its potential systemic effects. There are important differences, however, between the systemic impacts of the different grace period scenarios.

An unrestricted grace period (US model) would have the strongest impact on the balance of the European patent system. It would yield both the highest frequency of use of the grace period and the highest level of legal uncertainty as a result of that use. US companies would be the main users of the grace period (accounting for 44% of all potential requests), whereas legal uncertainty would mostly impact European companies (perceived in 65% of cases).

Against this backdrop, the introduction of balancing mechanisms would have an important deterrent effect on grace period requests. As compared with the unrestricted grace period, the share of patent applications exposed to frequent or occasional use of the grace period drops by 40% with a declaration requirement (Japanese and Korean model), and by two thirds with the availability of prior user rights (Australian model) or a safety net (combining a declaration requirement and prior user rights).

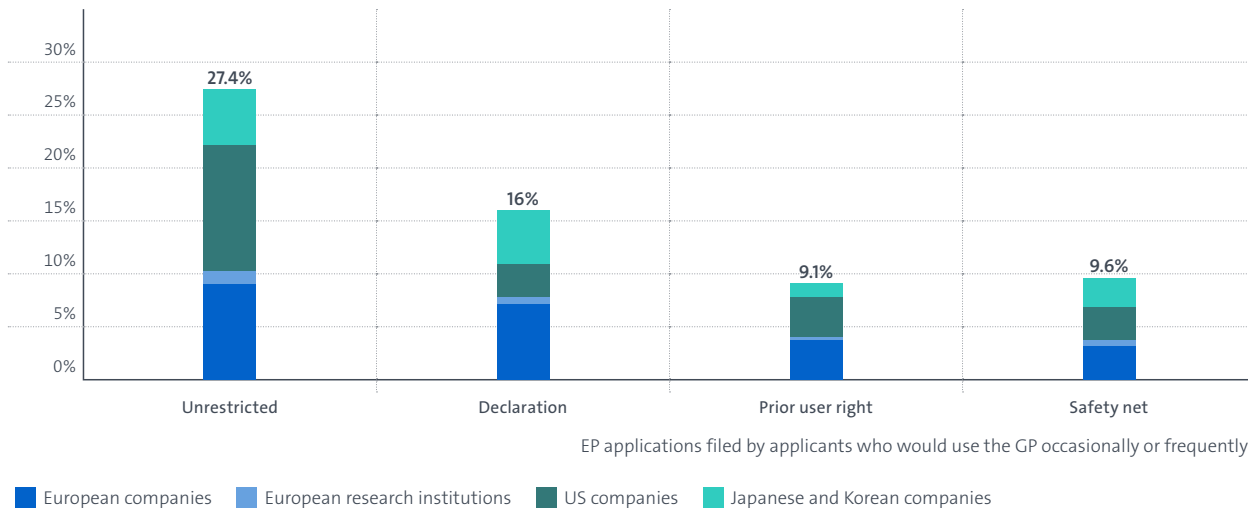
The balancing mechanisms also significantly reduce perceived legal uncertainty. EPO applicants who anticipate significant legal uncertainty as a result of an unrestricted grace period account for a majority (55%) of European patent applications. However, they become a minority (of 37% to 44% of European patent applications) when balancing mechanisms are introduced. It should also be noted that the higher uncertainty associated with prior user rights seems to reflect a bias among respondents, who tend to view legal uncertainty from the applicant perspective rather than as “third parties” exposed to the risk of infringing patents stemming from graced disclosures – even though they had been asked to assume a third-party perspective when completing the survey. As such, it actually constitutes a further deterrent to the pro-active use of the grace period.

Figure E.3

### Estimated impact of four policy scenarios

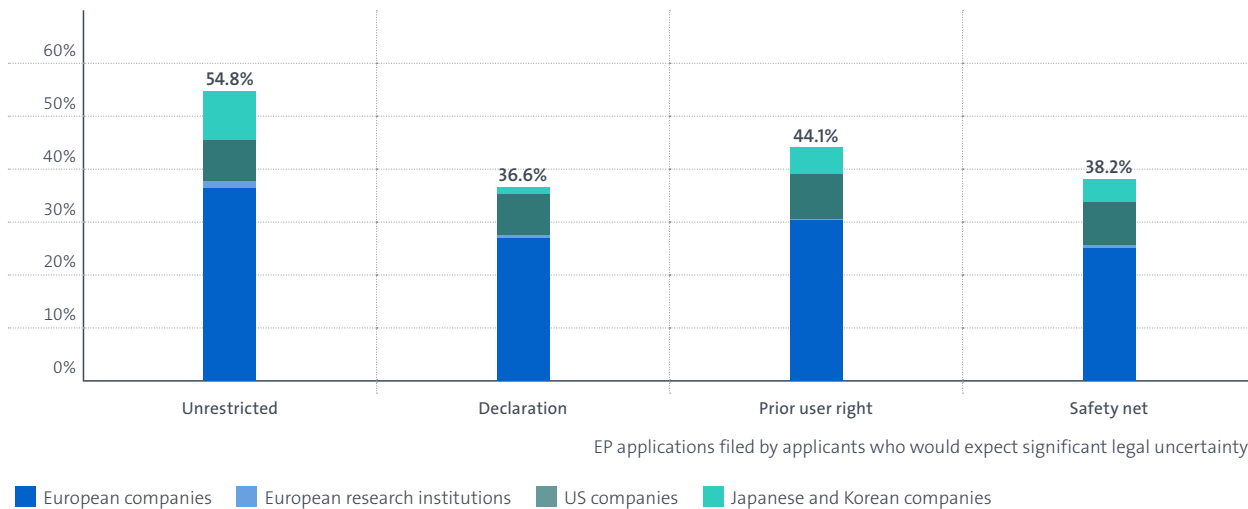
#### a. Frequency of use of the grace period

Share of all EP applications



#### b. Perception of legal uncertainty

Share of all EP applications



Note: Responses of participants are weighted by their volume of EP applications

The results reported are estimated shares of all the European patent applications filed by the respondents in the last three years. They have been calculated by using survey data as a first step to calculate, within each EPO applicant category (i) and for each scenario (j), the patent-weighted shares ( $A_{ij}$ ) of respondents reporting an occasional or frequent use of the grace period (Figure E.3 a.) or a significant level of legal uncertainty (Figure E.3 b.). As a second step, the overall share ( $S_{ij}$ ) of European patent applications for which respondents in a given category (i) report an occasional or frequent use of the grace period (Figure E.3 a.) or a significant level of legal uncertainty (Figure E.3 b.) in a given scenario (j) has been calculated by multiplying the average share  $A_{ij}$  of those respondents within their category by the share  $B_i$  of this category of respondents in all European patent applications according to the EPO Patent index 2021 (i.e.,  $S_{ij} = A_{ij} * B_i$  for category i and scenario j).

Source: EPO survey on the grace period

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